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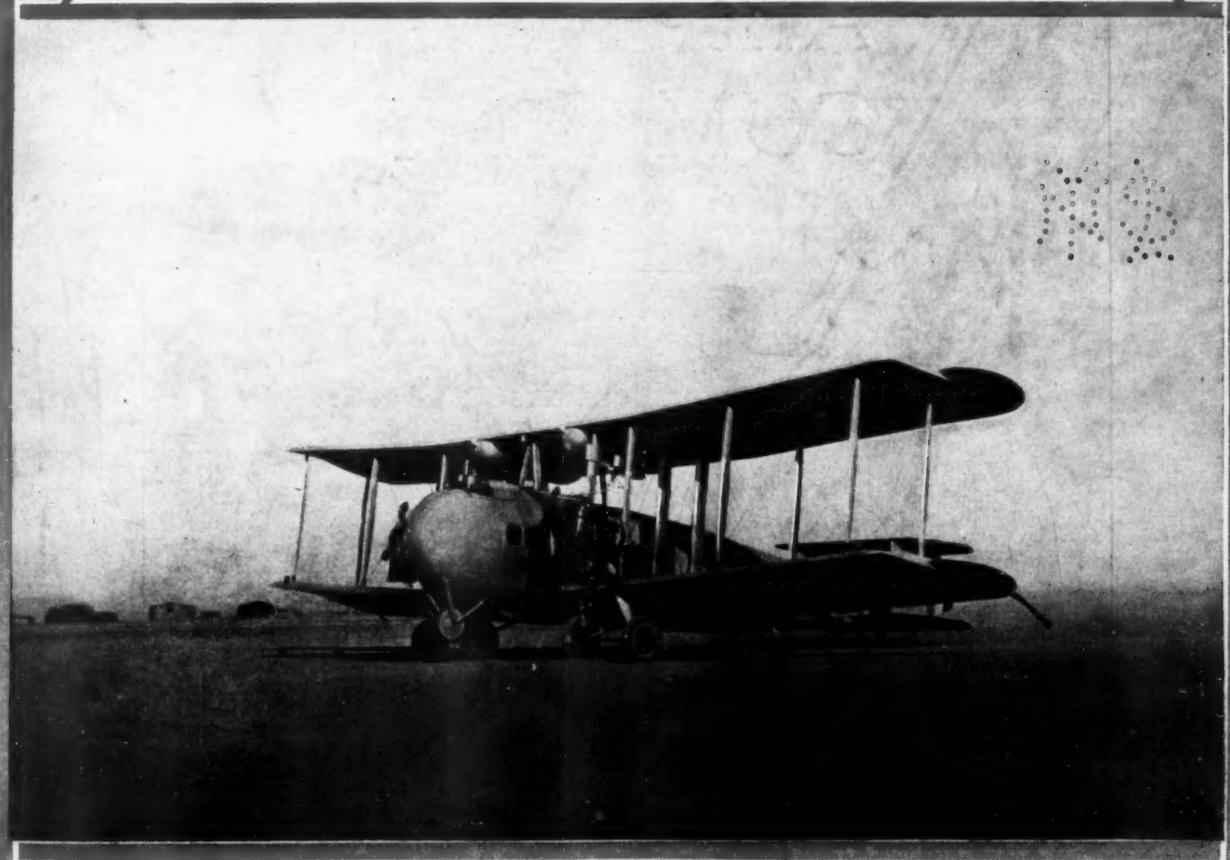
AVIATION

The Oldest American Aeronautical Magazine

JANUARY 4, 1926 Issued Weekly PRICE 15 CENTS



Vickers Vernon Troop and Mail Carrier Used in Irak

VOLUME XX

NUMBER 1

SPECIAL FEATURES

THE POWELL RACER

AVIATION IN THE RIFF

THE AMERICAN POLAR FLIGHT PROJECT

GARDNER PUBLISHING CO., Inc.
HIGHLAND, N. Y.
225 FOURTH AVENUE, NEW YORK

Entered as Second-Class Matter, Nov. 22, 1920, at the Post Office, at Highland, N. Y. under Act of March 3, 1879.

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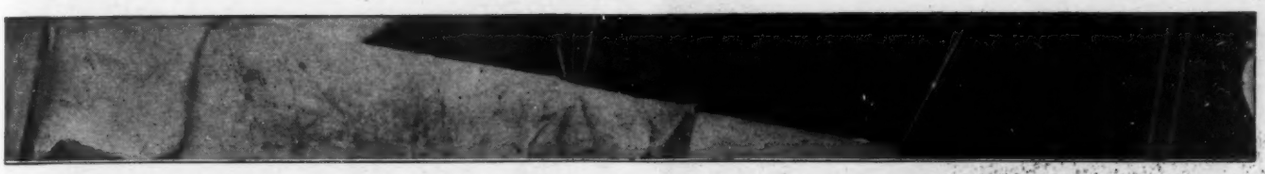

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JANUARY 4, 1926

AVIATION

VOL. XX. NO. 1

Published every Monday

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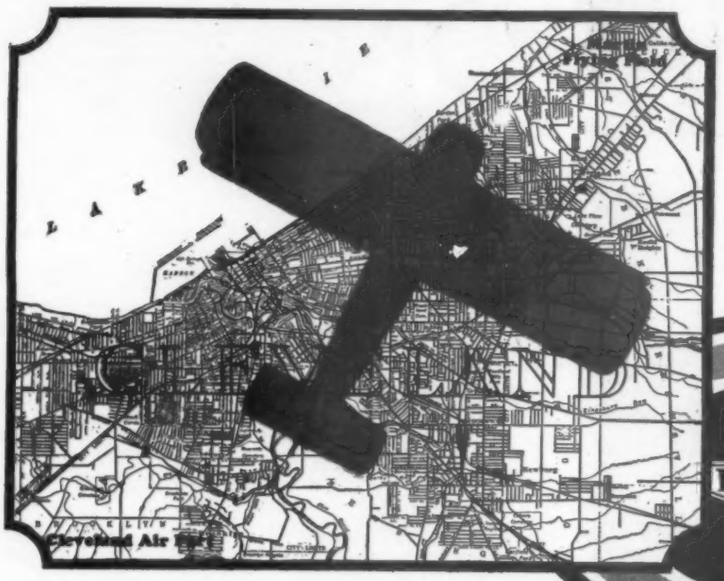

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VOL. XX JANUARY 4, 1926 No. 1

1926

WITH THIS, the first issue of 1926, AVIATION greets its readers in a congratulatory spirit, and with optimistic hopes. May the coming year bring to everyone engaged in aeronautical endeavor, a nearer realization of his hopes. And may our readers continue to have an increasing reason for their loyalty and appreciation, which is so freely and frequently expressed.

To review the aeronautical events of 1925 would, we believe, be recounting a story that is already well known. It is not too much to declare that more progress has been made in the last twelve months in every phase of aviation, than in any previous year. Unfortunately, in aerostation, the year has not brought the developments that had been confidently expected. But setbacks in any line of progress, are, fortunately, only obstacles that bring greater efforts toward ultimate success.

Aeronautical education would be the proper designation of the outstanding achievement for the year just closed. The governmental agencies, as well as the public, are more fully informed as to the possibilities of flying as well as its limitations, than ever before. The foundation is laid for constructive work in 1926. To this task, immediate consideration should be given so that the greatest results may accrue.

The Bingham Bill

THE FIRST result of the recommendations made by all the investigations in 1925, has been the passage by the Senate of The Bingham Bill to promote and regulate flying in the United States.

This bill differs from all others that have been considered, except the Wadsworth Bill, which also passed the Senate last year, in that it only attempts to regulate commercial interstate flying, leaving the control of pilots and aircraft engaging in air work within the confines of a single state, to local laws or voluntary submission to federal control. This point of difference is all important and, while some of the language used in the bill is somewhat ambiguous, Senator Bingham has inferentially assured the Senate, as well as AVIATION, that the intent of the measure is only to regulate and promote commercial inter-state commerce, making it so advantageous that all engaged in flying will wish to avail themselves of the advantages of this general regulation.

Another departure from previous suggestions is in the placing of all supervision in existing bureaus of the Department of Commerce under a 2nd. Assistant Secretary rather than in a new bureau. This change has the great advantage of entrusting the successful operation of aircraft regulation to the Secretary of Commerce and his Assistant, rather than to a minor official. It centralizes responsibility and makes the administration of the law more economical.

The wide discretionary powers given to the authorities charged with the encouragement of commercial interstate air transportation and aerial service, is also a good indication of the breadth of the purposes of the bill.

AVIATION has feared that some provisions would be adopted in a bill of this kind which would have the effect on American Aeronautics which the strict regulation abroad has shown. Fortunately, the Bingham Bill has taken this situation into account and is clearly attempting to promote rather than extinguish. If this law, before its final passage, is not amended, so as to change its purposes, a happy solution of the regulatory problem will have been reached.

The Polar Flight

THE ANNOUNCEMENT of a new Arctic venture in the proposed airplane flight across the North Pole, to be undertaken next Spring, should arouse the greatest interest. That such a flight is possible, there would seem little doubt, but, like all pioneer undertakings,—and an Arctic flight is no exception to the rule—sound backing and a carefully prepared organization, are the basic essentials, and with these, it would seem, the new proposal will be adequately provided. Undertakings, such as this one, if of nation-wide interest, are to be commended. Not only have they, as a result of their broad backing, a greater chance of success, but any consideration of mere personal advertisement, the one great flaw in so many similar undertakings, is reduced to a minimum.

As to the value of such an expedition, it is interesting to note that the announced object of the flight is both to explore the Arctic regions, as well as to prove the possibility of and actually achieve a flight across the northern extremities of the earth. From the military standpoint, it is frequently pointed out that the shortest route to Asia from Europe and America is by way of the North Pole. This alone should provide a sufficient incentive for such a flight as the one proposed. From the commercial standpoint, much development will be necessary before the polar regions are rendered available to the traveling public desiring to use airplanes or airships for travel between America and Europe. The proposed undertaking is highly commendable, but its greatest immediate value lies in the field of exploration, rather than in providing a practical air route for the future.

The 1926 American Polar Flight

Airplane Flight Project to Leave Early in Spring

A NEW PROJECT for the conquest of the North Polar regions by airplane, has recently been launched. The expedition, which is to be commanded by Capt. George Hubert Wilkins, Australian explorer and an aviator, will be under the joint auspices of the American Geographical Society, the Detroit Aviation Society, and the North American Newspaper Alliance. The main object of the flight is not, primarily, to reach the North Pole itself, but to fly over the "Pole of Relative Inaccessability", which is described as that point actually farthest from any navigable waters; the vertual center of any so called continent, which may exist in these regions.

Expedition for Scientific Purposes

The most reliable information on the entire project comes from the North American Newspaper Alliance. It is understood that the project has already been financed completely and it is directed by a board of control, headed by William B. Mayo of Detroit, General Manager of the Ford Motor Company. The scientific purposes of the expedition are attested by the presence on this board of Dr. Isaiah Bowman, Director of the American Geographical Society; Vilhjalmar Stefansson, the explorer, and Capt. Wilkins, who was one of the chief scientific aides to Ernest Shackleton on his South Polar expedition.

Two airplanes will be used for the flight which will start from Point Barrow, Alaska, about March.

The idea of an airplane flight from Alaska to the Ice Pole occurred independently and almost simultaneously to Wilkins and to Stefansson. Captain Wilkins was in London at the time and proceeded immediately to the United States to go over the proposal with various interested parties, including Dr. Bowman, Mr. Stefansson and representatives of the Detroit Aviation Society. Following a series of meetings in Detroit, in which Dr. Bowman, Mr. Stefansson, Major Loring Pickering, general manager of the North American Newspaper Alliance, and Captain Wilkins participated, the expedition formally was organized and the Board of Control was named.

Discovery of Land Expected

Although it is not the primary purpose of Captain Wilkins, who will be in charge of the expedition, to hunt for land, it is generally expected that land will, in fact, be discovered, in view of the belief that a continent exists between Point Barrow, Alaska, and the Ice Pole. Reasons for this belief are mainly concerned with the following facts:

First—The prevailing Arctic winds, as observed and recorded by many explorers, indicate the possibility that a high land point exists in the neighborhood of the Ice Pole.

Second—The Arctic tides, as charted by Harris, the American oceangrapher, indicate the presence of a mass of land between Point Barrow and the geographical pole.

Third—The formation of the earth's surface in other parts of the world, taken with proved geological theories, makes it seem possible that land exists in the unexplored area.

Fourth—Birds, geese, gulls and eider ducks have been observed flying northward, into the Polar Sea, from Alaska and Siberia, during the early summer. They have been observed returning with fledglings in late summer.

Fifth—Polar soundings, taken by several explorers, indicate that the water of the McKenzie River, pushing its way out under the ice of Beaufort Sea, is divided by some land mass.

Sixth—Arctic whalers, who have returned from the edge of the ice pack, believe that land exists somewhere within that pack. Their reasons are mainly made up of intangible traditions, founded on the drift of the ice, the winds, the flight of the King eiders, the Ross gulls and the Hutchins geese!

Some whalers have reported that they saw black masses which may have been land or may have been nothing but the black polar mists. "Keenan's Land" was on the maps for many years, but Stockerson, standing on the polar ice, took observations which showed that there was no land where Keenan's Land was supposed to be.

The Most Inaccessible Point

Stefansson calls the Ice Pole the "Pole of Relative Inaccessibility". It is, when considered from the old viewpoints of polar travel, the most difficult place to reach in the Arctic. It is the point most distant from all the points reached by ships, being the center of the frozen ice, into which no surface ship has steamed. Instead of being at 90 deg. North longitude 00, the Ice Pole is near 84 deg. North longitude 160. When it is recalled that, until recent years, all polar travel demanded

The route over the north polar region to be followed by the proposed expedition

a ship for a base, it was apparent that it was vastly more difficult to reach 84 North, 160 West, than it was to reach the geographical pole. And so no one reached it. The Ice Pole is, as yet, the undiscovered pole.

Personnel of Board of Control

The Board of Control, which will govern the flight, consists of the following members: Chairman, William B. Mayo of Detroit, chief engineer and general manager of the Ford Motor Company; general manager, E. S. Evans of Detroit, engineer and capitalist; Dr. Isaiah Bowman of New York, director of the American Geographical Society; Vilhjalmur Stefansson of New York, explorer; Loring Pickering of

New York, general manager of the North American Newspaper Alliance; Capt. George Hubert Wilkins, Australian explorer and a pilot; Harold H. Emmons of Detroit, attorney and sportsman explorer.

No explorer has yet ventured toward the center of the ice pack which exists between the Ice Pole and Point Barrow, although several have touched its edge. Peary, on his sledge trip to the geographical pole, was on the opposite side of the sphere. So were Amundsen and Ellsworth on their recent polar flight. Nansen skirted the ice pack in the "Fram". Stefansson skirted it with his dog teams and sledges.

Captain Wilkins will take a crew of airplane riggers and mechanics to Fairbanks, the Alaskan railroad terminus, to assemble the airplanes. A group of pilots and mechanics will fly the planes to Point Barrow.

It is expected that two airplanes will be taken to Point Barrow for flight purposes. Either or both may be used on the polar flight or flights. One of these, a Fokker three-engine plane, has already been secured.

Will Live Off the Ice

Captain Wilkins will rely on the Stefansson method of Arctic travel, in case the expedition finds it necessary to make a forced landing on the polar ice. That is, he will attempt to live off the ice.

Peary, Nansen and nearly all others thought it necessary to carry sufficient food and equipment for a two-way journey, whenever they ventured out across the frozen polar seas. Amundsen, in general, has always followed the Peary method. He says he does not believe it possible for men to make their living from the ice. The Amundsen-Ellsworth planes went into the Arctic carrying sixty-six pounds of food per man. They carried tents, sledges and a canvas boat, also.

Seals Under the Ice

Stefansson, on the other hand, has proved that there are seals under the Arctic ice. He and Wilkins have practiced the three methods by which seals may be taken and have proved that hardy men may live on seal meat alone. Consequently Captain Wilkins will fly "light". He will carry enough food per man to sustain life for only two weeks, the major part of the weight carried being gasoline.

The members of the expedition expect to leave Detroit by rail in January and proceed to the West Coast, thence to Seward by steamer and on to Tenana, Alaska, by rail. The planes will be rigged at Tenana and flown from there to Barrow. The complete personnel of the expedition has not yet been decided upon.

Temple N. Joyce Joins Curtiss

Announcement is made of the engagement of Temple N. Joyce as associate in the Sales Department of the Curtiss Aeroplane & Motor Company, Inc.

Mr. Joyce is well known in aeronautical circles both in this country and abroad. He received his commission as First Lieutenant in November, 1917. The year following he was Assistant Chief Test Pilot at Issoudun, receiving his captaincy in 1919.

Since the war he has continued his interest in aeronautics as a reserve military aviator and for a number of years represented Moraine-Saulnier in this country.

Mr. Joyce was one of the organizers of the Schneider Cup Races in Baltimore this year.

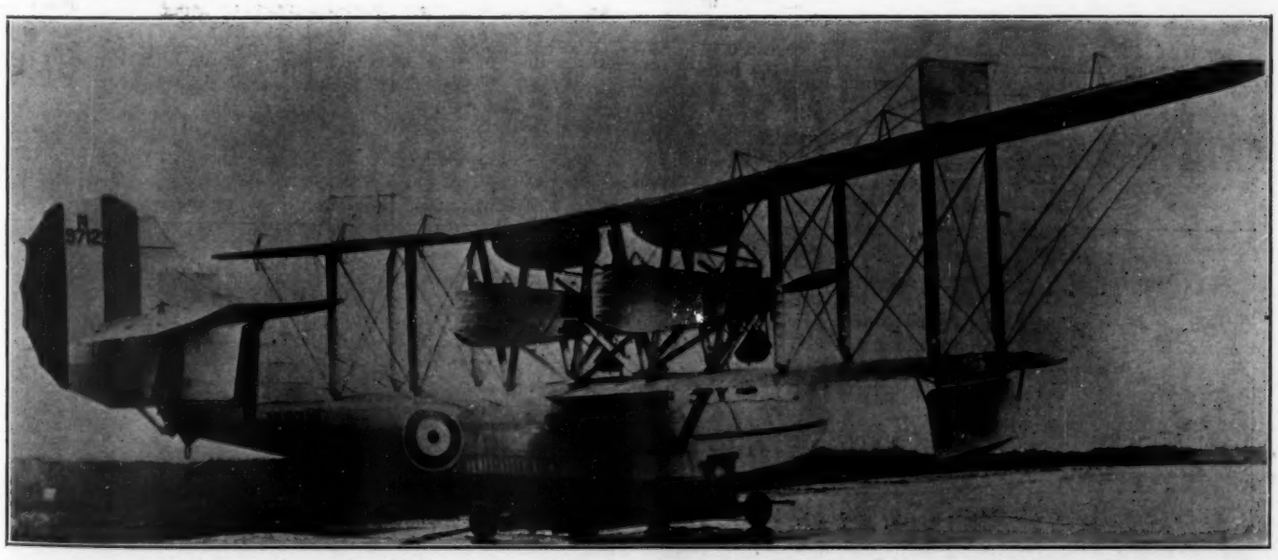
Curtiss Lark Makes Long Flight

A Curtiss "Lark," with Wright J4, 200 hp. engine, equipped with twin Scintilla magnetos, which was delivered to the Florida Airways Corp. on Dec. 5, recently completed a 2,000 mile flight. The itinerary was from Garden City, Long Island, to Miami, Fla., across that state to Ft. Myers, Fla., and return to Detroit.

Major Reed Chambers, President of the Florida Airways Corp., who made the trip in the "Lark", has expressed himself as highly pleased with the performance of the plane and particularly its ability to get in and out of small fields. He says, the Wright J4 engine gives the plane a cruising speed of more than 100 m.p.h. and that the engine required practically no attention during the trip, although for over a 1000 miles, ordinary automobile gasoline was used. He reports also using only two quarts of oil from New York to Miami, Fla., while the average gasoline consumption was 13 gals. per 100 miles.

The Strength of the British Air Force

Sir Samuel Hoare, British Secretary of State for Air, answering a question in Parliament as to how many airplanes were ready for flight on war or emergency service, said that the present distribution of the flying units of the Royal Air Force with an average of twelve machines for each squadron, was twenty-seven and one-half squadrons at home, nine with the fleet, and eighteen and one-half squadrons at stations outside the home country. This is 654 airplanes, in all.



International News Reel

A recent acquisition of the British Royal Air Force. The "Kingston" flying boat, equipped with two Napier "Lion" engines. The hull is constructed mainly of duralumin, while stainless steel finds a place in the construction. The seaplane is said to be very seaworthy.

New French Load Carrying Altitude Records

Latest Farman 2000 Horsepower Giant Plane

NEW load carrying records have been set up by Lucien Bossoutrot, the well known French airplane pilot, flying a Farman Super Goliath, type F140-Bn. 4. The records were made during two flights carried out on November 12 and 16, respectively, from LeBourget airdrome, the airport of Paris.

In the first flight, the plane carried a load of 4,000 kg. and attained an altitude of 5,000 m. (16,404 ft.). It took 1 hr. 14 min. to attain this height, while the total flight lasted for 2 hr. 19 min. 16 sec. Incidentally, the airplane, in taking off with this load, ran 100 m. (328 ft.).

World's Record Broken

The world's records broken by this flight were:

Duration, carrying 1,000 kg. (former record 2 hr. 13 min. 49 sec.)
Duration, carrying 1,500 kg. (former record 2 hr. 13 min. 49 sec.
Duration, carrying 2,000 kg. (former record 1 hr. 47 min. 10 sec.)
Duration, carrying 3,000 kg. (former record 1 hr. 47 min. 10 sec.)
Duration, carrying 4,000 kg. (former record 1 hr. 47 min. 10 sec.)
Altitude with 2,000 kg. (former record 4.475 m.)
Altitude with 3,000 kg. (former record 1.942 m.)
Altitude with 4,000 kg. (former record 1.363 m.)

Flying again on November 16, further records were made. This time the plane carried a load of 6,000 kg. and attained a maximum altitude of 3,500 m. (11,483 ft.) in 55 min. The complete flight lasted 1 hr. 12 min. 21 sec. and again the distance run by the airplane in taking off, is of interest. On this occasion this distance was 110 m. (361 ft.). Four records were broken by this flight, namely:

Duration, carrying 5,000 kg. No previous record.
Duration, carrying 6,000 kg. " " "
Altitude, carrying 5,000 kg. " " "
Altitude, carrying 6,000 kg. " " "

The record set by Lt. H. R. Harris, flying the Barling Bomber at Dayton, Ohio, 1923, when 3,000 kg. of ballast were carried and the flight lasted 1 hr. 19 min. 11.8 sec. will be recalled as the previous American claim upon this world's record.

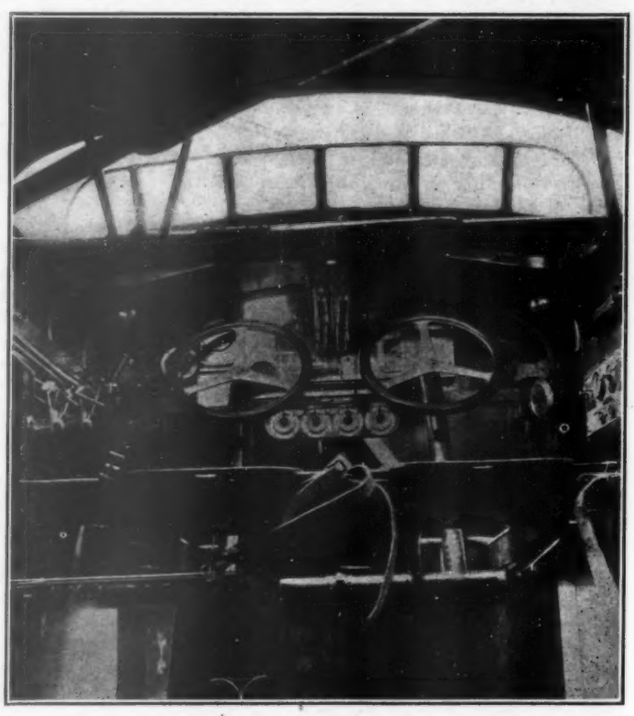
These new records have not yet, however, been officially recognized by the F.A.I.

The Airplane

The machine in which Bossoutrot flew, is one of the latest products of the Farman company and was exhibited at the last aviation salon in Paris. It is a characteristic Farman type normal biplane with four engines mounted in tandem pairs on the lower wing, one each side of the fuselage. It is essentially a bombing plane although doubtless the type could, if it has not already been done, be adapted to passenger carrying work.

The Navigator's Cockpit

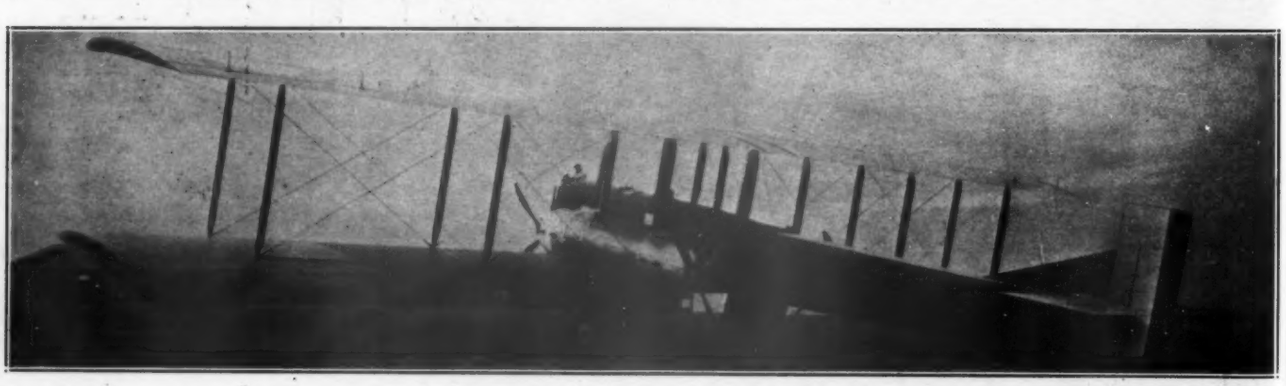
The forward cockpit, right up in the nose of the fuselage, is arranged for the navigator. Not only is this compartment equipped with a normal type of cockpit hole at the top, but the navigator may remain inside the compartment where an observation window opening outward in the nose of the fuselage, gives a very clear view forward and downward.



The pilots' cockpit of the Farman "Super Goliath"

Navigating facilities are provided in this compartment together with bomb releases, etc.

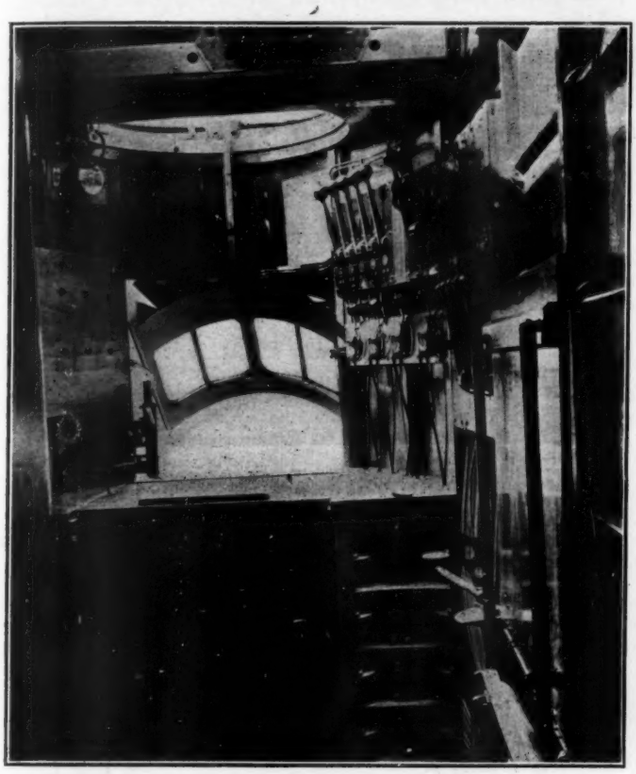
Further back in the fuselage, behind the navigator's compartment, is the pilots' cockpit. This is equipped with dual controls for two pilots and a complete set of instruments. The pilots sit side by side, high up in the fuselage, with ample view, though protected behind a well arranged wind screen. The pilots' cockpit is reached through a door leading to it



General view of the Farman "Super Goliath"

from the compartment further back in the fuselage. In this compartment, which is very roomy, the radio apparatus is located.

The engines are Farman, type 12 W.E. developing 500 hp.



The navigator's compartment showing the observation window opening forward

at 2,130 r.p.m. They drive two tractor and two pusher propellers, in tandem pairs, all the four propellers being four blade types. Strut type Lamblin radiators are employed.

The general details of the plane are:

Span	35 m. (115 ft.)
Total length	19.7 m. (65 ft.)
Total height	6.5 m. (21 ft.)
Wing area	266 sq. m. (2,863 sq. ft.)
Total power	2,000 hp.
Weight loaded ready for flight:	
1st record flight	12,700 kg.
2nd record flight	14,400 kg.

Bettis and Doolittle Air Records Ratified

The International Aeronautic Federation has ratified as world records the performances of Lieut. Cyrus Bettis, Air Service, in winning the Pulitzer Race at Mitchel Field and of Lieut. James H. Doolittle, Air Service, in winning the Schneider seaplane trophy at Baltimore.

Lieutenant Bettis, in the Curtiss Racer, covered 100 km. at a speed of 249.337 m.p.h., and 200 km. at 248.975 m.p.h.

Lieutenant Doolittle, flying the same machine fitted with pontoons, covered 100 km. at 234.772 m.p.h. and made a maximum straightaway speed of 245.713 m.p.h.

Belgrade Aero Exhibition

The airplane exhibition organized by the Belgrade Aero Club was opened recently.

The exhibition showed types of airplanes which represent the development of aviation from early days. In contrast with the Breguet type 19, there was the primitive and humble Bleriot which took part in the Serbo-Turkish war of 1912. From the Jugoslav workshops were shown two types of Brandenburg seaplanes, one made by the Rogozarski Airplane Construction Works, and the other by the Aviation Division at Novi Sad.

A Plea For Jacob Riis Park

To The Editor, Aviation:

I notice in your issue of November 30th, that the aviation station at Jacob Riis Park on the Rockaway Peninsula which has been used since the war as a naval base and aviation field, has been demanded back from the Navy by a unanimous vote of the commissioners of the Sinking Fund of New York City, and I earnestly ask the privilege of your pages to put in a plea that the use of this aviation base shall not cease with the dispossession of the Navy Department.

New York is at present the greatest center of commerce on earth and ought to remain so. It is probably the greatest center of human population.

It is probable that if an area of something over seven hundred square miles, which is the area of Greater London, were to be set off around and including what is now New York, a reasonably compact area could thus be set off which would include a greater population than the population of Greater London.

One half of all the passengers that fly in Europe are Americans.

There are probably more privately owned and flown machines in this country than in all the rest of the world put together, yet we lag behind in the matter of commercial air lines, of municipal airdromes and in the regular transportation of freight and passengers on schedule time over established routes.

The mouth of the Hudson River and its environs present incomparably greater physical and commercial advantages as a center of air navigation than does the City of London. An expanse of water adequate for the rise and descent of planes can be found far nearer the center of New York than to the center of London. From New York an immense transportation in seaplanes and amphibians can be carried on over thousands of miles of coast line without crossing any political boundary, and there is every reason to expect that the air commerce of America will preponderate, not only over the air commerce of Great Britain but over the air commerce of the whole of Europe including Great Britain, as does now our railroad traffic excel the railroad traffic of the whole of Europe, including Great Britain.

There is likely to be, in the near future, a considerable air traffic along the coast in each direction from New York, if a reasonable effort is made on the part of the citizens of New York to give their city the leading position that is rightfully hers in what is soon going to be the most far-reaching commerce and method of transportation that can exist on this planet. Now is the time to act. We therefore urge that the City of New York take over this property, not for general purposes, but for the specific purpose for which it has been utilized since the World War. That they fit it up as an aviation base, both for land planes and for seaplanes. That they do not relax their efforts to obtain other air ports also, within reach of the citizens of New York, for, in the near future, it is going to take many fields, and large fields, and great facilities, to accomodate the air traffic that is coming. Neglect or local opposition will indefinitely postpone the growth of air traffic in New York, and may even give some other great center on the Atlantic Sea Board such a start as ultimately to jeopardize the position of New York as the greatest center of commerce in the world.

Commerce wears its own channels. There are fifty places that can easily be named that have greater natural advantages as centers of commerce than the City of London, first among them all being the City of Constantinople, a lugubrious remnant of a gigantic Byzantine civilization, concealed beneath a smear of Turkish filth.

Let not New York sacrifice her primacy and her birthright by neglect of this new navigation now just beginning, which will, within the lifetime of those now living, overshadow the whole earth.

Signed,
Godfrey L. Cabot,
President, N.A.A.

The Powell Racer

A Light Plane Incorporating Many Excellent Features of Larger Designs

THIS PLANE was designed for the 1924 air races and work on the design was started as soon as the announcement of the light plane race was made. The engine was ordered late in March, 1924. Owing, however, to the British two-seater competition, absorbing all the available Bristol "Cherub" engines that year, it was not until considerably after the races were over that the engine arrived.

The design of the plane is now nearly eighteen months old and is considered by the designer to be somewhat heavy, although showing up very well. It is, however, not a difficult matter to cut down the weight very materially in an improved design. Throughout the design of the Powell "Racer" every attention was paid to careful streamlining and fairing.

The Wing Structure

The wings call for no special comment being of conventional construction, except that the wire lugs for the streamline wires are placed inside the wing, this being the arrangement where the streamline wire shows its true advantage. This burying of the fittings is no easy matter and probably has never been attempted before in such a small thickness of wing,—about 1¾ in. in the rear spar, and 2 in. in the front spar. The design of the fittings was such as to allow the wire to swing in all directions, thus giving it a direct pull without any bending at the threads. A sketch is given showing how this was accomplished. The top wing was built in one piece with the dihedral built in and not bent. Splicing was not necessary as the span is under 16 ft.

Load Factor Considerations

Conventional stress analysis was made of the wing and all fittings bearing important loads. It is considered that the load factors should be at least as high for small planes as for large ones, as the accelerations met with are considerably greater in the small plane and give rise to loads difficult to estimate accurately. The question of handling small parts in the shops also enters into this matter to some extent. Redundancies sometimes occur unavoidably and must be remembered when tightening up the wires.

The wings have N struts between them, and, mainly on account of these N struts, the wings scarcely ever need lining up. They seem to come right whenever the plane is set up.

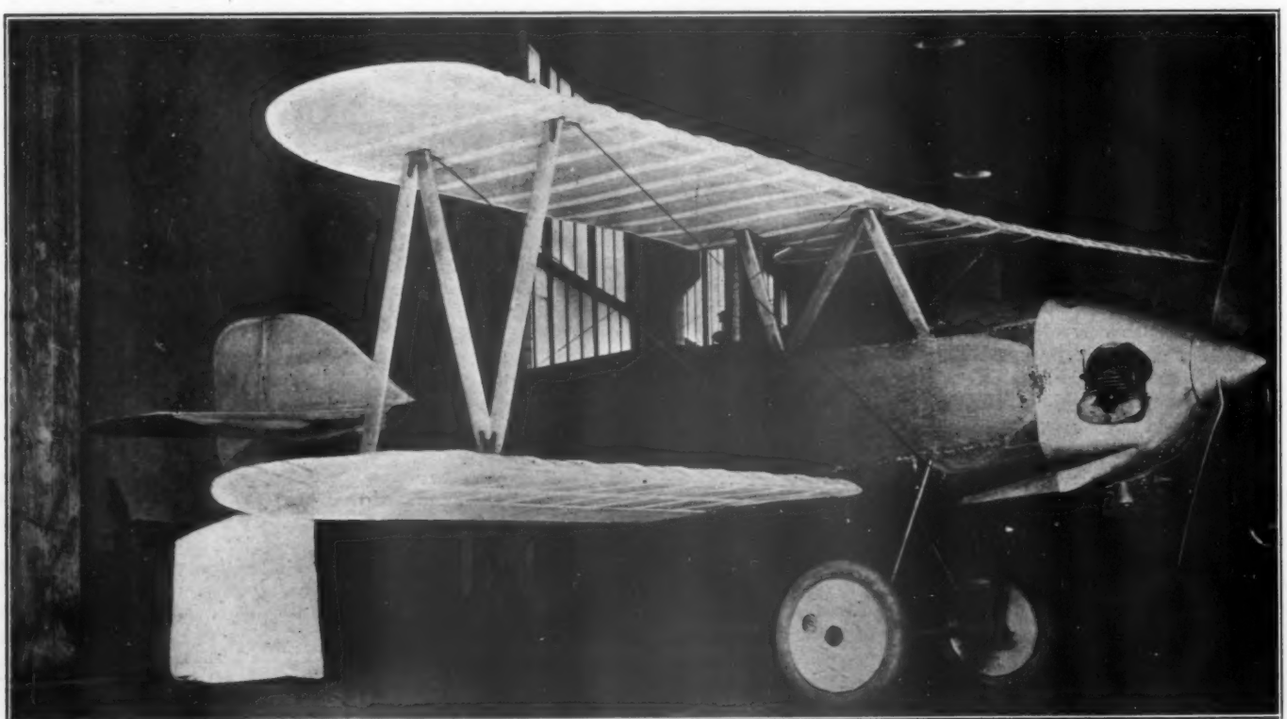
The plywood fuselage was built on ⅜" plywood formers, cut to the designed shape. In setting up, these formers were held in correct position by a large wooden jig. A jig was also used for the chassis parts while they were being welded. These jigs well repaid for the labor expended upon them.

The Power Plant

The engine, a Bristol "Cherub" is rated at 30 hp., was chosen, owing to the fact that there was, at the time of the design, no American engine of low horsepower available for light planes. The mounting is interesting. It was realized that the engine plate for a two cylinder engine needs to be made almost as heavy and strong as for a multicylinder engine of much greater horsepower. The reason for this is that owing to the inertia of reciprocating parts at high speed on a twin cylinder engine, a very fluctuating reactional torque arises. The torque variation was worked out for such an opposed cylinder engine and found to have even a negative value, during part of the cycle. The shape of the engine mounting in question is that of a truncated pyramid, attached very securely to the longerons. Apart from torque variation, a necessary feature of any two cylinder engine, the twin opposed engine is almost perfectly balanced and, at 3,200 r.p.m., runs very smoothly.

For simplicity and cheapness all levers, brackets, bell cranks, etc., in the plane, were designed to be cut out of one piece and bent to correct shape, without welding. The sketches show how this has been done in certain instances.

A tachometer was fitted into the wind shield, as there was



General view of the Powell Racer. Note the clean fuselage lines

nowhere else for it to go, some difficulty being experienced in finding room for the tachometer cable and the oil guage pipe with the 8 gallon tank as at first fitted. For the race at Mitchel Field, however, a new tank was made of only 2½ gal. capacity.

The Undercarriage

The chassis is of the Vee type with divided axle. The vertical down wire being disposed of in this case as the steel trough is amply rigid enough to take care of bending. It is noticeable how many designers of continuous axles, make their axles too weak, so that they deflect considerably and take a permanent set in bending. This can be avoided by making a simple calculation of the deflection of the axle tube. A divided axle is naturally a much better arrangement. The hinges of the rudder and elevators are made of leather which is somewhat of a novelty and seems to work out all right. A sketch shows how it is inserted.

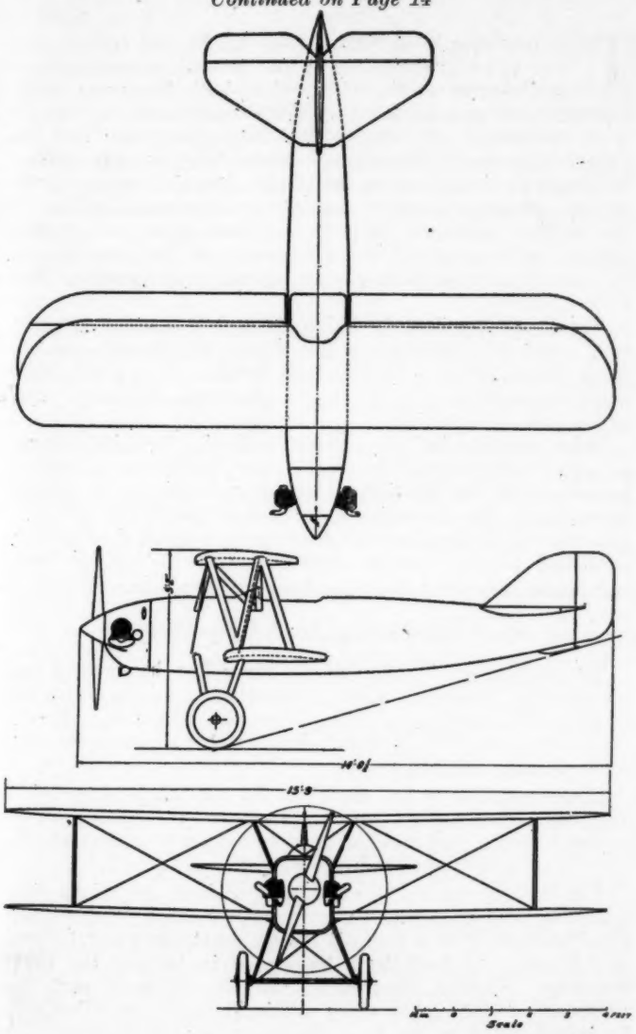
Specifications

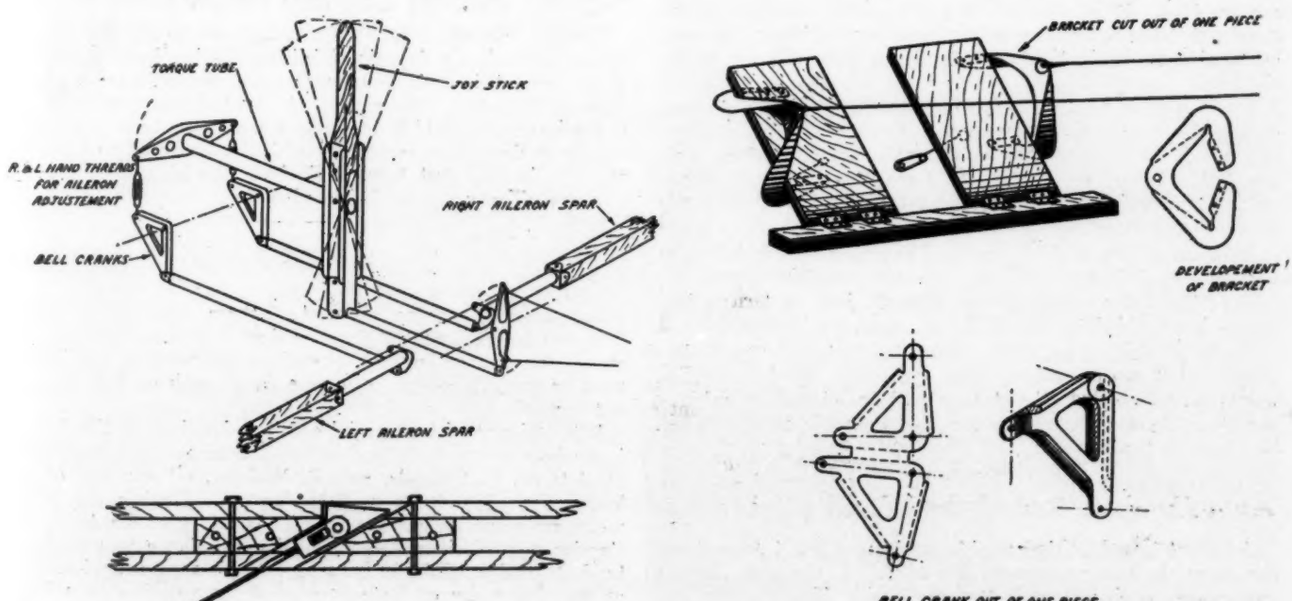
The general dimensions and performance figures are given in the accompanying table:

Length, overall	14 ft. 0 in.
Height, overall	5 ft. 2 in.
Span, upper wing	15 ft. 9 in.
Span, lower wing	15 ft. 9 in.
Chord, upper wing	32 in.
Chord, lower wing	32 in.
Gap	30 in.
Stagger	9½ in.
Airfoil (wing section)	R.A.F. 15
Angle of incidence, upper wing	0 deg.
Angle of incidence, lower wing	0 deg.
Sweepback	0 deg.
Dihedral, upper wing, (slope)	1in 28
Dihedral, lower wing, (slope)	1in 28
Angle of ship when resting on ground	15½ deg.
Span, tailplane	6 ft. 0 in.
Area of wings, *including ailerons*	76 sq. ft.
Area of ailerons	10.2 sq. ft.
Area of tailplane, *without elevators*	6.94 sq. ft.
Area of elevators	3.86 sq. ft.
Area of rudder	2.07 sq. ft.
Area of fin without rudder	2.23 sq. ft.
Track of wheels	3 ft. 2 in.
Weight empty	310 lb.
Fuel and oil 2 and ½ gallons gas	15 lb.
Crew	150 lb.
Total weight	475 lb.
Wing loading	6.2 lb./sq. ft.
Power loading	15.8 lb./hp. at 30 hp.
Fuel capacity, large tank	2½ gal.
small tank	8 gal.
Endurance, large tank	6 hr.
Range	400 mi.
Maximum speed	85 m.p.h.
Landing speed	50 m.p.h.
Climb to 5000 small tank	17 min.
Climb to 10000 small tank, altitude control not on	45 min.
Ceiling	15,000 ft.

All controls are direct acting, as far as possible, the rocking lever on the torque tube being placed forward so as to dodge the pilot's legs. The pilot's seat is about two inches

Continued on Page 14





The Powell Racer in detail. At the top on the right will be found general layout drawings of the plane. Below, details of the rudder control mechanism in the cockpit. Bottom right, construction of the bell cranks used in the aileron control. Top left, aileron and elevator control details in the pilot's cockpit. Bottom left, method of anchoring wing bracing wires into spars.

The 1927 Appropriations for the Air Services

THE following is an extract from the Budget dealing with the appropriations set aside in the recommendations to Congress for the Air Services, both Army and Navy, together with appropriations for the continuance of the Air Mail Service of the Post Office Department and for the National Advisory Committee for Aerohautics. The appropriations, as stated, are not intended to include the pay of Air Service officers or housing and maintenance expenses for the Air Service personnel, etc. Furthermore, there is no intention of utilizing any of the appropriations for manufacture of aircraft in competition with the aircraft industry. The extract follows:

For the air services, the estimates carry a total of $42,447,000, being $16,793,000 for the Army, $22,391,000 for the Navy, $2,750,000 for the Air Mail Service of the Post Office Department and $513,000 for the National Advisory Committee for Aeronautics.

These amounts include contract authorizations, but do not include funds, provided in other budget items, for the pay of commissioned Air Service officers' pay, housing and general maintenance for the enlisted Air Service personnel, and certain classes of supplies and services of a general character, furnished for Air Service activities. If we include these items, the total for the Air Service in 1927 will amount to not less than $76,000,000.

The estimates for the Air Services for 1927 are in furtherance of the program which was commenced this year. They propose procurement from the industries of airplanes, engines and accessories to the amount of $20,954,000. The remaining $21,493,000 is for maintenance, operation, experimentation and research.

This Government is pursuing an orderly policy toward building up its air services. We realize that our national defense air problem is primarily an industrial problem. We also know that the airplane industry today is dependent almost entirely upon Government business for its development and growth.

We do not contemplate any competition between the Government and industry in the production of airplanes. With the business already assured by the appropriations for the current year, and with the further assurance of the business contemplated by these estimates, there should be a normal and proper growth in this industry. If we continue this policy, there need be no fear of our national defense situation, in so far as air strength is concerned.

Air Navigation Charts

The Hydrographic Office of the Navy Department has just completed a special aviation chart of the area including approximately, Baltimore, Washington and Hampton Roads, which is pronounced of more value to naval aviators than any other existing map or chart.

Clearly marked on the chart are the possible landing fields, the compass courses for both airplanes and seaplanes between principal cities, and areas of possible danger to aviators whose course lies either over land or water.

The Hydrographic Office has been working for a long time collecting data from which to prepare this chart. Suggestions have been sought and received from a great many naval pilots and these suggestions have been used in making the chart complete. Further suggestions for improvement and the inclusion of data required by pilots in their navigation will be incorporated in the new editions of the chart when they are received. It is planned to print on the margins of the charts, sketches of landing fields, light houses, buoys, and any other aids to navigation or safe flying that will be of assistance.

The potential dangers, such as shallow water, fish weirs and stakes, danger zones from gun firing ranges, etc., are shown clearly on the chart. Flying fields that are marked as such, are distinguished on the charts from those which are not marked and which would be difficult for pilots to locate easily without some assistance from a map.

Aviation charts will be prepared covering all coastal areas of the United States. The use of such complete charts will add to the safer navigation of aircraft just as the modern charts have added to the safety of ocean navigation.

Capt. W. S. Crosley, U. S. Navy, in charge of the Hydrographic Office, announces that when the special aviation charts have been completed they will be placed on sale, as are other charts prepared by the Hydrographic office and will be issued to the services.

Another 'Round the World Flight

A flight around the world, of somewhat international character, is being planned for 1926. A German Dornier flying boat equipped with British Napier Lion engines and piloted by Commandant Franco, an Italian, will be used and the flight is to start from Seville, the route to include Cape Verde, Pernambuco, Buenos Ayres, etc.

Paris Decorates American Flyers

The share of the American flyers in the defeat of Abdel-Krim's Riffians was commemorated on Dec. 14 in the office of General Gouraud, Military Governor of Paris, who presented a cross of a Knight of the Legion of Honor to Captain Lansing C. Holden, of New York, one of the pilots in the American squadron in Morocco.

The ceremony was held under a banner presented to General Gouraud by the City of Boston. A color guard of American pilots, who served in Morocco, was headed by Lieut. Col. Charles W. Kerwood and included Majors Granville Pollock and James V. Sussan and Captains Edwin Sparkes, Reginald Weller and Thomas Butts.

Captain Holden served with the A.E.F. as a member of a Rickenbacker outfit and was credited with downing eight German planes.

Helium Deposits in Ontario

Premier Ferguson of Ontario, has made the official announcement that a deposit of helium gas has been discovered at Inglewood, in Peel County, Canada, about 40 miles northwest of Toronto. Three wells there have been purchased by the government, which has, for some time, been extracting gas from them in co-operation with the University of Toronto. It is said that these wells have the highest content of this gas of any in the British Empire.

The Powell Racer

Continued from Page 13

off the floor of the fuselage and all three push rods go under this and have clearance for working. Pedals are used instead of a rudder bar, which enables the pilot to use lighter muscles and, therefore, to have a finer touch on this important control.

The designer wishes special credit to be given to the following, who voluntarily helped in building and testing the plane: P. Altman, F. Thiefels, and R. Walters, all students of the University of Detroit, and M. Turin. During the trials, which were carried out, through the courtesy of the Army Air Service, at Selfridge Field, valuable assistance was rendered by J. Kempler, while A. Sekarasy, senior aeronautical student at the University of Detroit, carried the machine on a Ford roadster, all the way from Detroit to New York and back, some 1,800 miles, to the air races. The preliminary flight tests of the plane were carried out by J. Faucher.

Answers to Correspondents

By CY CALDWELL

THIS BUSINESS of writing for "AVIATION" is an insidious habit that grows on one like a corn. I began it innocently enough, at the request of the late Lawrence D. Bell, who was quietly buried a year ago in a Los Angeles department store. Then I continued writing to amuse myself. But now I've decided I must either stop or go broke. I can't stand the strain on my pocket. For, during the past month, I've contributed approximately one tenth of the money spent in this country, for postage stamps.

I receive letters, hundreds of letters, from all over the country, asking for information and advice on anything even vaguely connected with flying. Why they ever imagine my advice would be of value to them, I cannot conceive. Certainly it has been utterly valueless to me.

A Matter of Postage Stamps

But I don't object to that. I'll give anybody advice. What gets me is that nobody ever sends a stamped envelope for my reply! They seem to think I get stamps free from the Post Office Department—or that I print my own. Such is not the case, dear Correspondents. I'd like to print my own stamps, just as I'd like to print my own $10.00 bills, for instance. But I can't do it. I haven't the time. I'm too busy answering letters.

A well-known author wrote to me the other day—and if anyone is used to enclosing stamps for the return of rejected manuscripts, it's an author—yet for my reply he enclosed no stamps. He said that he was writing a story featuring a test pilot as the hero, and would I be so good as to write in detail just how a plane was tested, so his hero wouldn't be guilty of a fox pass? (I think it was). I told him if he'd wire me, prepaid, his hero's name, that I'd insert it in a story of a test pilot I had on hand and send it to a publisher myself. That stopped him, anyhow. And the joke of it is, I sold his letter to an autograph collector for $7.50.

Unfortunately, however, all the letters I receive aren't worth $7.50. I've had letters assay as low as $.00075. Among these are the Airport Letters from men wanting to know how they can make their home town cough up an Airport. They've heard of Cleveland Airport—who has not?—and they think that I know how Cleveland got it, and can give them some formula for getting one like it. Now isn't it reasonable to suppose that if I knew how to get an Airport—free—I'd get one for myself—and raise oats on it? Naturally.

Then there are the young men, and their name is Legion, who want to know how to "get into aviation". Personally, I'd as soon think of writing to an inmate of an insane asylum asking him how I could get in there with him. However, I write back and tell them I'll swap directions of how to get in, for directions of how to get out—and not be any hungrier out, than I was in.

No matter what the subject of their letters may be, all my correspondents begin something like this: "I have read with pleasure your notes in AVIATION, which greatly amused me." Then they proceed easily and naturally to pry something out of me, including postage. Their having read something I have written, seems to have put me under an eternal obligation to them. Apparently, I have injured them in some way and they are geting back at me. I may say that anything I write is written with love and pity for all who read it, and malice toward none, not even Detroit.

The Inventor Writes

A prolific and wordy class of correspondent, who has been favoring me with his attentions lately, is the Inventor. He has something radically different, and of course better, than anything in the shape of a flying machine yet produced. Usually the letter ends up: "Now why wouldn't that be a good thing?" to which I invariably reply: "Dear Sir:

Why, indeed?

Yours truly,

Cy Caldwell".

Now a reply like that has two distinct advantages: It will not tire him to read it, and it agrees with him absolutely. No room for argument there.

The inventions run all the way from putting gas in the wings for greater lift, to substituting a wheel for the tail skid so the plane will roll easier. Folding and flapping wings, honeycomb wings, helicopters, are some of the inventions submitted for my approval—and financing, which is a great compliment to me. It certainly speaks well for my

The Huff Daland "Pelican" a dual control, five purpose Navy plane. Equipped with a Wright "Whirlwind" 200 hp. engine, the machine has a very fine performance either as a land plane or as a seaplane.

rugged honesty that I haven't stolen any of these inventions and grown rich from them.

Some time ago a man wrote asking the condition and value of a plane he had seen advertised for sale. It had stood out in all weathers on a Cleveland field for nearly a year and was ready for the junk man, if any plane ever was. "Do you consider it a good buy?" he asked. I didn't want to say a word against the plane, so I replied:

"Dear Sir:

Reference good-bye mentioned in your letter, I beg to advise that I have entirely expended my 1925 appropriation for flowers.

Cordially yours,
Cy Caldwell"

And he never even wrote thanking me for spending time and a postage stamp on him.

Well, I've bought my last stamp. Hereafter I'll answer Correspondents through the happy medium of "AVIATION" and let L.D.G. pay the postage. Here's a letter I got today without a return stamp. I'm all out of stamps, or I'd answer this one by mail.

Dear Mr. Cy Caldwell

I have read with interest your earnest and serious articles in AVIATION. They have been a great help to me. Any time that I felt too light-hearted and gay, I have been in the habit of turning to your column, and experienced no difficulty in getting depressed at once; and I hear that many people have been helped by you, just as I have been. To me, your writings are a solid rock in a sea of light and frothy literature, such as the Army and Navy Orders printed at the back of AVIATION.

I am sixteen years old—and enclose my picture to prove it—and I have a great interest in flying. I should love to become a pilotess, if you would take me in your school—or what have you? I should love to study flying with you, if possible, and believe I should learn quickly. Shall I come?

Sincerely yours,
Lois Lovelace

Pottstown, Pa.

My Dear Miss Lovelace:

Or may I say, "my dear Lois?" Is is *so* much more friendly, is it not? I am charmed by your kind letter and your picture, really charmed, Lois, my dear child. To one of my age it is indeed refreshing to receive the approval of the young, especially when beauty is combined with youth, as in your fair self.

Of course you may come, my dear. Pack up and—Don't wait to pack! Come just as you are! I'll look after you like a grandmother—you'll hardly know the difference—I have such a kindly, sweet old face. Little children come running to me on the street saying, "What big teeth you have, grandma!" No—that's Little Red Riding—but no matter. I feel strangely excited today; it must be the weather, or something. I just love your picture—it's so like me when I was your age. More beautiful, of course. But I mean the look of innocence, you know? Dear, dear! What a child I was! Always in mischief, of course, but a charming little fellow, nevertheless. But how I run on! Come as soon as you can, my dear.

Your affectionate instructor,
Cy Caldwell

Merchandising in a New Field

By M. J. McINANEY
Assistant Sales Manager
Alexander Aircraft Co., Denver

"Anything that can be sold, can be produced." This has not been true regarding commercial aviation up to date. At the present time any manufacturer who can turn out a good plane at a fair price is assured of a ready market. This condition is attracting many into the manufacture of commercial planes and almost every week or two we see a new plane advertised in "AVIATION."

The aircraft manufacturer and dealer of the future, will have to employ intensive methods of merchandising in order to create and maintain a satisfactory volume in the face of keen competition.

Realizing the problems in merchandising the Eaglerock, a campaign has been planned for assisting dealers, that is a new departure in this field.

The Alexander Industries have been successful in several pioneer projects and have developed a large staff of merchandising experts and a force of salesmen who operate in every state in the union, and who are lending assistance to the organization of a dealer force throughout the country.

Cooperating with Dealers

Various methods of dealer cooperation have been adopted, an outline of part of which, follows:

An aggressive advertising campaign using several different mediums is already under way. Very good results have already been obtained. This campaign will be enlarged with volume of production.

Another dealer help will consist of an advertising and merchandising bureau which will assist dealers in conducting their own business in a more profitable manner. For instance, a dealer is engaged in the garage business. The Alexander Aircraft Company by means of its merchandising bureau will assist the garage man in increasing his sales and service. He will through increased profits become a better Aircraft representative

A clause in the dealer contract requires the mailing in to the home office of names and addresses of all prospects interested by the dealer. These prospects will be followed up by an intensive mail campaign from the home office and kept interested, thus creating increased sales to dealer without extra cost to him.

A dealer will also be visited by flying sales promotion men, who will demonstrate and help him sell in his territory, dealer getting full commissions on all sales made in this manner.

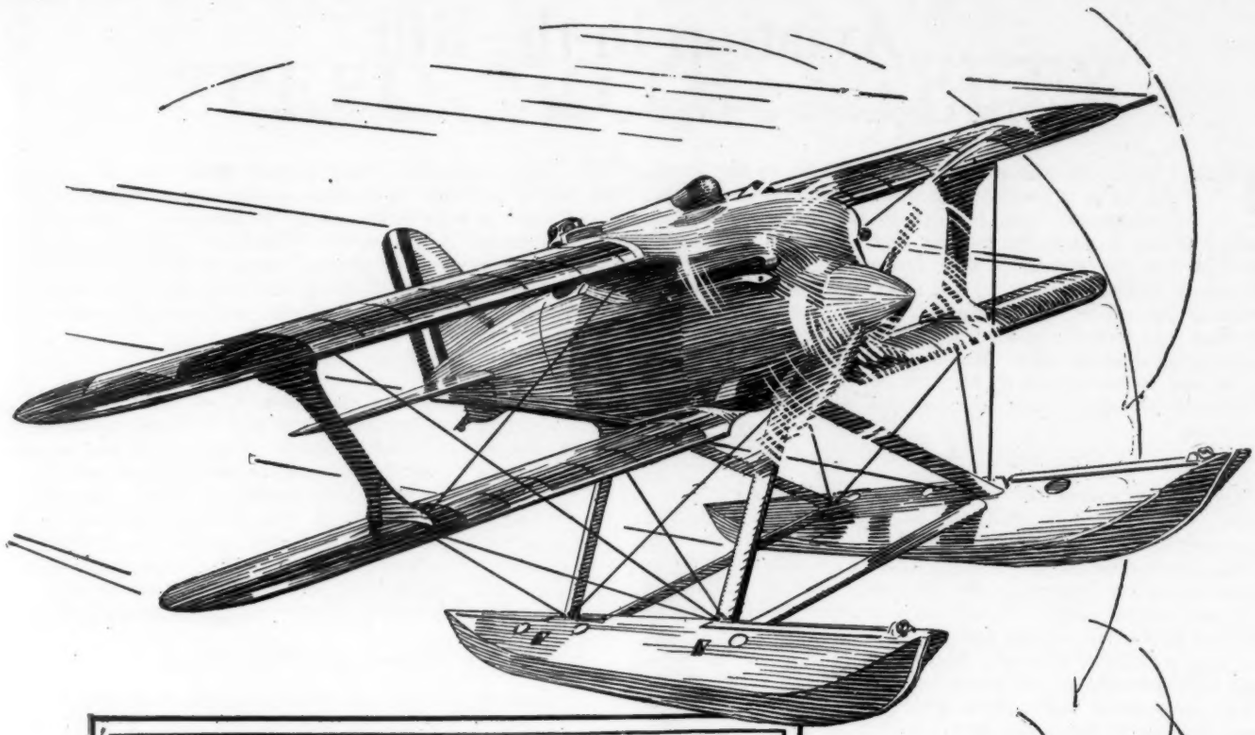
Training in Salesmanship

Plans are under way to turn out a sales course and sales manual for the use of dealers and their salesmen. Aviators who wish to become salesmen will be instructed in up to date methods of selling and salesmen who desire to become aviators will be given a course in flying. In this way a force of aggressive aviator-salesmen will be organized.

Various other methods of dealer helps will be used, such as Commercial Club cooperation, manual training school instruction and cadet courses.

Dealers will also be advised of successful means of increasing their revenue through passenger carrying, photographic work, mapping, crop dusting, assisting police in tracking thieves, taxi service, advertising and all the various ways in which an airplane can be be used to advantage. A film publicity service is being prepared by the Alexander Film company to popularize commercial aeronautics.

The men or companies selected must be active, progressive and capable of visioning the magnitude of the field they are entering. They must realize that the airplane will some day be as popular as the automobile, a necessity instead of a luxury. The manufacturer and dealer who is prepared to handle it on this basis is the one who will be the leader in commercial aviation.



The Schneider Cup Winner was Valsparred!

WINNING the Pulitzer 1925 Trophy and smashing the world's land plane record for a triangular course was not enough glory for this Curtiss army racer.

Two weeks later — equipped with a pair of floats—it won the Schneider Cup Race as well. Piloted by Lieutenant James H. Doolittle, it covered the 350 kilometer course at the rate of 232.573 m. p. h. — more than 33 m.p.h. faster than England's challenging seaplane.

Then to cap the climax this veteran champion, the very next day, established a new seaplane record of 245.715 m.p.h., official time, over a three mile course.

This Curtiss Racer is Valsparred, of course! For the Curtiss Company long ago discovered that Valspar is the one varnish that can safely withstand the terrific ordeal of airplane service!

VALENTINE'S
VALSPAR
The Varnish That Won't Turn White

Aviation in the Riff

The Cooperation of Airplanes with the French Military

THE French operations against the Riffians in the North of Africa have been somewhat difficult as far as aviation was concerned, due, mainly, to the extremely broken nature of the country, the lack of any centers to attack and the fact that the friendship with, rather than the hostility of, the native tribes was being sought after—a fact which limited bombing operations. Furthermore, complications arose from the fact that friendly and hostile tribes, as well as the actual soldiers, all dressed alike. However, published extracts from the report of the colonel of the 37th. regiment, show what an extremely important part aviation played in the war with the Riffs.

Supplies Carried by Plane

The report covers the period from April to the end of June. At this time, the Riffs suddenly arose in rebellion, surrounding many of the French block houses. In certain cases it was impossible for the French columns to get in and offer relief and it was left to the aviation service to form the liaison with the outside world. Thirty outposts were watched during the first half of the month and, by the end of the month, only ten had not been relieved. Supplies had run out in these and were brought in by plane. Water, in the form of ice, food, ammunition and medical supplies had to be brought in and, as some of the posts were less than 60 feet in diameter, the planes had to come down to within from 30 to 150 feet of the ground in order to drop their loads, this being, of course, extremely hazardous work.

In many cases the besieged post called for the silencing the enemy artillery which was successfully accomplished several times. A wire from one of the besieged posts which had thus requested help, reads: "Excellent work of airplanes stopped a big attack on Aoulai, enemy artillery silenced since 8 hr. 30 min." Both bombing and machine guns were used in attacking gatherings which were concentrating against the outposts.

Heavy Bombardments

For the protection of the flanks of columns marching on objectives, regular barrages were laid down by planes flying by at intervals of two minutes. There were also a large number of raids carried on against enemy posts and blockhouses, especially during the month of June. On June 8, thirty-three bombardments at Bou Redoud, resulted in 200 casualties, according to the information section. Further, on June 9, twenty-five bombardments resulted in twenty casualties, and on June 21, ten bombardments resulted in over 600 casualties and, according to the refugees, demoralization of the population.

Observation Planes Used

Breguet, type 14A2, machines were the only planes available in Africa during the first month. This is really a two place observation plane and not a bombing plane but, however, was adapted to the service. Fields, as near the front as possible, were used during the day, but at night many of these

$3,500.00 Type 2-A WOODSON EXPRESS Lots of six $3000.00

SPEEDY
STURDY
STABILITY
QUALITY
RELIABILITY
ECONOMICAL

Pay load 450 lbs.
Max. Speed 138 M.P.H.
Min. Speed 40 M.P.H.
Cruise 100 M. P. H. at half throttle leaving 100 H.P. reserve power

Designed for mail feeder lines, intercity passenger and express lines, mapping, etc., can be converted instantly being equipped with folding, seats in front that can be folded back out of the way when cargo space is needed, it is also equipped with doors in the floor with everything clear below for mapping.

FOR MAIL FEEDER LINES

We offer this model equipped with the Wright J-4 200 HP air cooled radial, quotations upon request.

Write for Booklet Giving Description of this Wonderful Performing Plane.

WOODSON ENGINEERING COMPANY - - BRYAN, OHIO

High, Speed, Load
RADIATORS LAMBLIN
WATER AND OIL
Have the World's Records

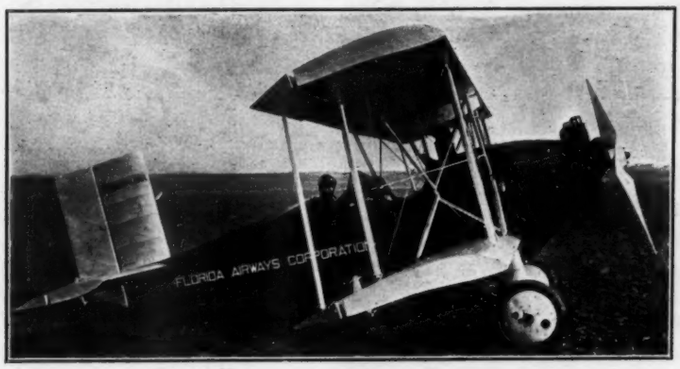
DEQOITTINE

30.000 Radiators in working

Établissements LAMBLIN, 36, Bd Bourdon, NEUILLY-SUR-SEINE (France)

SPEED WITH SAFETY

Curtiss



THE LARK IS NOW IN SERVICE

See what Major Reed Chambers, President of the Florida Airways Corporation writes us.

"It may interest you to know that I have just completed a two thousand mile trip from Garden City, Long Island, to Miami, Florida, across the state of Florida to Ft. Myer, and return to Detroit, in the Curtiss Lark which was delivered to us on December 5th.

"I am very enthusiastic over the performance of this plane and I believe it to be the most modern plane of its type in existence. I wish to compliment you particularly on the strength of the landing gear and the ability of the plane to get in and out of small fields. Its stability is also remarkable.

"A word also about the motor. The Wright J-4 200 HP gives the plane a cruising speed of better than 100 m.p.h. This motor had practically no attention on the trip and for over one thousand miles of the trip, ordinary automobile gas was used. We used two quarts of oil from New York City to Miami, Florida, and an average of one hundred miles to thirteen gallons of gas.

"I believe this plane has tremendous possibilities from either a training or commercial standpoint."

This is but one of the Lark series. In addition to the J-4 200 HP air cooled motor installation, the Lark is built with either the 180 HP Hisso motor or the Curtiss C-6 160 HP motor, giving a range of performance suitable for varying types of commercial flying and for military training purposes. For water flying the J-4 machine is furnished with pontoon equipment.

The Lark has been developed with particular attention to inexpensive production and maintenance. Our prices will interest you.

Write for Curtiss Lark Series Booklet.

Curtiss Aeroplane & Motor Company, Inc.

GARDEN CITY, N. Y.

MANUFACTURERS AND DISTRIBUTORS OF CURTISS-REED PROPELLER

were evacuated and the planes returned to the safer and larger fields in the rear. Especially in view of the observation planes used, it was found to be a great saving if bombs and gasoline were hauled by road to points near the scene of fighting. Most of the flying was carried out individually or in small units of two or, at the most, three planes, each pilot operating and attacking on his own account.

Many lives were saved and much suffering avoided by the use of ambulance airplanes during these operations. Hanriot planes, carrying only one stretcher, were able to land on small fields very near the front. In certain cases, the patients were eventually transferred to larger planes, which carried them from the regular fields to base hospitals.

The following figures show the extent of the flying operations:

The French Breguet 14B type Bombardment Plane

APRIL—89,936 lb. of bombs dropped, 1275 flights, of which 538 were missions of war, 1444 flying hours.

MAY—269,148 lb. of bombs dropped, 2618 flights, of which 1722 were missions of war, 3,052 flying hours.

JUNE—165 tons of bombs dropped, 2243 flights, of which 1463 were missions of war, 3043 flying hours.

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University Lectures on Weather and Flight

The seventh year of courses in aeronautical meteorology, presided over by Dr. Ford A. Carpenter, began with the current semester at the southern branch of the University of California at Los Angeles. The scope of these informative lectures may be gleaned from a few titles of the lectures, as follows: "Weather Information as Important Transportation Aids", "Forecasting Weather from Synoptic Charts", "Meteorological Instruments Used in Air Routing", Air-Lanes of the North Pacific Coast of America", "Climatic Factors in Air-Ways and Air-Fields", "Airships and Airplanes and Their Differing Dependability on Weather Information", "Personal Element in Flight", "Weather Conditions Affecting Visibility", Movements of the Upper Air and Their Significance", "Municipal Airports and Their Relation to Local Climatic Conditions", "Clouds as Storm-Warnings of the Sky", Physical and Mental Reactions in Human Flight", "Recent Advances in Aerial Photography Applied to Meteorology", "The Future of Aeronautic Meteorology". The enrollment in these classes has steadily increased from their establishment in 1919, and now numbers considerably over one hundred students who have taken the work to complete their studies in the departments of engineering, geography, commerce, teaching, etc., as well as a few who expect to make commercial aeronautics their profession.

Dr. Ford A. Carpenter

This course in aeronautic meteorology at the southern branch of the State University gives two science credits.

Model Tests with a Systematic Series of 27 Wing Sections at Full Reynolds Number

A systematic series of 27 wing sections, characterized by a small travel of the center of pressure, have been investigated at 20 atmospheres pressure in the variable density wind tunnel of the National Advisory Committee for Aeronautics.

The results are consistent with each other, and indicate that, for such "stable" sections, a small effective camber, a small effective S-shape and a thickness of 8 to 12 per cent, lead to good aerodynamic properties.

A copy of Report No. 221 by Max. M. Munk and Elton W. Miller, describing these experiments, may be obtained upon request from the National Advisory Committee for Aeronautics, Washington, D. C.

AIRPLANES FOR SALE

We have sold 105 airplanes this year, which leaves a balance of 228 airplanes still for sale. We believe the prices on airplanes are at their lowest, and a small deposit on any of our airplanes will hold same for spring delivery. We expect a sharp advance in prices very soon.

We still have plenty of Standards, Jennies, Canucks, Orioles, D.H.'s with Liberty motors, Spads less motors, T.M. Scouts with and without motors. A large number of these airplanes are set up test flown, and ready for immediate fly away delivery.

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NEW STANDARD J-1 AIRPLANES with guaranteed overhauled Hispano-Suiza motors, 150 H.P. $1500.00
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NEW STANDARD J-1 AIRPLANES with Government overhauled OX5 motors 900.00
NEW STANDARD J-1 AIRPLANES without motor 650.00

These airplanes come complete with tools and instruments and the front seat is built so as to accommodate two passengers. These airplanes have been reconstructed and new longerons, new controls, new wires, new struts, new fittings, new instruments were installed where needed. ⅓ deposit will hold any of the above airplanes for spring delivery, storage and insurance free.

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The splendid response to this special offer (originally limited to June, July and August) permits us to extend it until further notice.

We will guarantee to teach a student to fly and successfully operate an airplane by himself, regardless of the number of flying hours required, and further, to furnish an airplane, free of charge, for the period of one hour for practice flights.

The flying school of the Robertson Aircraft Corporation is one of the oldest and best known in the United States. All of the instructors are ex-army aviators with wide experience and the equipment is the best that money can buy. The flying field is approximately six miles from the city of St. Louis and is easily accessible by railroad, street car and hard surfaced roads. It is the largest and best privately owned field in the country and the International Air Races of 1923 were held there.

Our course includes thorough flying training as well as complete instruction in the over-haul, care and maintenance of both the airplane and motor. The time within which one can learn to fly, varies with the individual; eight to ten hours of dual instruction, stretched over a period of ten days to two weeks should complete the most stubborn case, and from then on, the refinements of the art can be gained only from experience. Commercial aviation is a rapidly growing industry. Don't delay! Enroll now!

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More Wright Engine Successes

At the close of 1925 comes word of another Efficiency Race won by the Wright air cooled engine. This time it is from Italy where the Annual Coppa del Mare Race was won by a Macchi plane powered with a Wright "Gale" 60 hp. air cooled engine. The efficiency formula for computing points for the Coppa del Mare is different from that used for efficiency races in the United States as it introduces the ratio of maximum speed to minimum speed as well as gasoline and oil consumption. This Coppa del Mare Race is primarily for small planes carrying one passenger in addition to the pilot, the formula used being as follows:

> Efficiency Score equals Average Speed (in km./hr.) X 175 (Consant for weight of pilot and passenger) X Maximum Speed ÷ Total consumption (gasoline and oil) and the Minimum Speed.

The plane powered with the Wright air cooled engine scored 926.29 points. The score for second place was 742.9 points. The Wright air cooled engine, therefore, scored 24.6 per cent greater efficiency than the second contender. To show that this performance of the Macchi plane is well in line with the exceptional performance of the Wright Bellanca plane powered with the Wright "Whirlwind" 200 hp. air cooled engine, in the efficiency race at the New York Air Races, it will be recalled that the efficiency figure for the Wright Bellanca plane was 53 per cent more than the score of the next competitor.

The other efficiency race in 1925 in which the Wright air cooled engine showed up well was the "Around Germany Flight" in which a Wright "Gale" 60 hp. engine fitted in a Baumer monoplane scored a sensational success. The high score of Wright air cooled engines in efficiency races not only in the United States but abroad, is another proof of the advantages of these engines for general commercial work.

The Collier Trophy for 1925

Attention is called to the fact that the Collier Trophy Committee, for the year 1925, is as follows:

Orville Wright; Geo. W. Lewis; Godfrey L. Cabot; Earl N. Findley; Porter Adams.

This committee will meet in January, 1926, to consider the claims submitted to it in connection with the Collier Trophy award, and notification is given that all developments intended for consideration by the committee must be received at N.A.A. headquarters on or before Jan. 15, 1926.

The provisions of the deed of gift governing the award of this trophy is as follows:

> THE COLLIER TROPHY, donated by Robert J. Collier, Esq., to be awarded annually by the National Aeronautic Association for the greatest achievement in aviation in America, the value of which has been thoroughly demonstrated by actual use during the preceding year.

A resumé of the awards to date is appended.

1911 to Glenn H. Curtiss for hydro-aeroplane development.
1912 to Glenn H. Curtiss for development and demonstration of the flying boat.
1913 to Orville Wright for development and demonstration of his automatic stabilizer.
1914 to Elmer A. Sperry for development and demonstration of gyroscopic control.
1915 to W. Sterling Burgess, for development and demonstration of Burgess-Dunne hydro-aeroplane.
1916 to Elmer A. Sperry for development and demonstration of Sperry Drift Set.

The trophy was not awarded from 1917 to 1920 on account of the War.

1921 to Grover C. Loening, for development and demonstration of his air yacht.
1922 to the Personnel of the U. S. Air Mail Service for their wonderful achievement in completing a year's operation along the different routes from Coast to Coast—without a single fatal accident.
1923 to pilots and other personnel of the U. S. Air Mail Service for successfully demonstrating to the world the practicability of night flying in commercial transportation.
1924 to the U. S. Army Air Service for having accomplished the first aerial flight around the world.

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SOME EXTRACTS FROM IT:

Crank Shaft	$15.00	Bearing, Main	$ 1.00
Radiator	$12.00	Valves, Inlet, 20 Ex.	$ .30
Tires (26x4)	$ 3.00	Propeller Hub Puller	$ 2.00
Tires, D.H.	$ 4.00	Zenith Carburetor	$12.00
Shock Absorber (good live rubber) per foot	$ .12	JN double aileron wings	$50.00
Set of landing gear struts	$ 8.80	Piston Rings	$ .15
Complete set of 80 gaskets	$ 3.00	New Berling magnetos	$15.00
Booster magnetos	$ 5.00	Toothpick propellers, all makes	$10.00
Altimeters	$ 5.00	Hisso 150 H.P. propellers	$20.00
Spark plugs	$ .20	D.H. wheels	$ 5.00
Cylinder	$ 3.00	Complete set 20 hose	$ 1.25

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AIRPORTS AND AIRWAYS

Chicago News

By Terrence Vincent

"The Morton Grove Flying Field, on Demster Street, will continue to operate until next spring, at least," said Pilot William Westlake. "The realtors are busily selling that ground, but have kindly refrained from placing stakes or putting in other improvements until spring. After April, the birdmen will move again, further away from Chicago."

"Hart Smith and Roy Ahern, each with a Hisso-Standard biplane, are enroute to Miami, Florida. While at Waycross, Ga., they staged an aerial circus for the Shriners, and gave an unadvertised thrill. Their parachute jumper, Ewald Probst, left the plane at 1,800 ft., the 'chute opened at 1,600 ft., then went closed until about 200 ft. above the ground, where it opened to three-fourths size, and Probst landed without injury.

"E. B. Heath continues to give instruction to students, rain or shine, snow or sleet, on his field on the River Road near Touhey avenue.

"The Signius Brothers, who returned to Morton Grove, from Florida and stored their plane, have taken it out of storage and are continuing their winter flying."

The National Air Transport, Inc., continues busy with the routing of preparation. The Christmas rush will be without airplane service between Dallas, Tex., and Chicago, but Easter hats may be sent both ways in 1926, according to Don Bartlett, assistant to the General Manager, Paul Henderson.

"We expect to begin scheduled trips sometime between March 20 and April 1," he said. "The first of the Curtiss "Carrier Pigeons" will be set up in Buffalo, N. Y., and flown over the N.A.T. Route, from Chicago to Dallas via Moline, St. Joseph, Kansas City (Mo.), Wichita, and Oklahoma City.

"Other 'Carrier Pigeons' probably will be sent by freight from Buffalo to Dallas, there set up and flown north over the new air mail route."

St. Joseph has been selected as the place ((*NOT* headquarters)) at which Liberty motors will be rebuilt and overhauled for the N.A.T. Kansas City, Mo., will be the division point ((*NOT* headquarters)), and Chicago will continue to be the general administrative offices of the N.A.T. from which all N.A.T. lines will be governed, according to Mr. Bartlett.

Boston News

By Porter Adams

During the last week the regular and reserve pilots at the Boston Airport made 76 flights with a total time of 1150 minutes, including two cross-country hops: one by Major B. Netherwood, flying to Hartford on Monday and returning the same afternoon, and the other by Lieut. Frank Crowley on Thursday, who flew to Mitchel Field with a DH and returned on Friday. The National Guard, 26th Division, Air Service, made 14 flights with a total time of 450 min., while the Navy, at Squantum, made 72 flights for a total flying time of 558 min.

* * *

During the week there were also several notable flights

METEORMOTOR
THE LIGHTWEIGHT CHAMPION

MODEL 72

Still—THE PIONEER

IT WAS TO BE EXPECTED THAT THE BUILDERS WHO IN 1919 BROUGHT OUT THE WORLD'S FIRST SUCCESSFUL LIGHT PLANE, WOULD DEVELOP THE IDEAL MOTOR FOR THE LIGHT PLANE—AND NOW AFTER FOUR YEARS OF EXHAUSTIVE EXPERIMENTING OFFFR THE POWERFUL LITTLE METEOR-MOTOR WHICH DEVELOPS 20 HP., WEIGHS COMPLETELY EQUIPPED ONLY 60 LBS. AND CONSUMES BUT ONE AND ONE-HALF GALLONS OF GASOLINE PER HOUR. TRULY THIS IS THE IDEAL MOTOR FOR THE LIGHT PLANE AND THE PRICE COMPLETELY EQUIPPED IS WITHIN REACH OF ALL WHO APPRECIATE A MOTOR OF THE HIGHEST GRADE.

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Roosevelt Field, Westbury, Long Island — 250 W. 57th Street, New York City

made by commercial aircraft, one of the best being when Lieut. Robert L. O'Brien took a new Travel Air plane to New York and brought back to Boston a shipment of scarfs for a sale at The Shepherd Stores. This flight was the first commercial express undertaken by the Boston Airport Corporation. The scarfs were met on their return at the Airport by The Shepherd Stores' truck which made a quick run to the store, where the scarfs were put on sale the same afternoon.

• • •

During a single day this week the Wright-Bellanca six-passenger closed cabin monoplane carried 21 passengers between eleven and one o'clock. These flights were arranged by Mr. C. G. Peterson, President of the Wright Flying Corporation who had been in Boston with the plane for the Aviation Show. Among the passengers carried on these flights were E. J. Ovington, a member of the Chamber of Commerce Committee on Aviation; Dr. Henry F. Libby and his grandson, G. E. Emerson of the Travel Air Company; Harold B. Richmond, Vice President of the General Radio Corporation; Daniel Rochford, the Aviation Editor of the Boston Transcript and Mrs. Rochford, several newspaper men and Edward T. O'Toole, one of the Directors of the Boston Airport Corporation. In addition the Bellanca made another flight to Connecticut carrying W. Irving Bullard, President of the Colonial Air Lines and Vice President of the Merchants National Bank, and Mr. Brennan, Vice President of the First National Bank of Boston. The plane was piloted by Frederick H. Becker, Chief Pilot for the Wright Flying Corporation. At the end of the week the Bellanca returned to New York carrying five and made the flight from the Airport in two hours and twelve minutes.

• • •

It is reported that sometime between December 15th and 20th there is going to be an airplane race to help along the drive for funds for the disabled veterans' Christmas Remembrance Committee. The planes will start from the Boston Airport and race from city to city in Massachusetts dropping literature relative to the drive. It is expected that a valuable cup will be given to the winner. Mrs. Robert Lincoln O'Brien, wife of the editor of the Boston-Herald, is chairman of the general committee and Mrs. Clarence R. Edwards, wife of Major General Clarence Edwards, is head of the co-operating organization.

Florida Airways Corp.

Plans for the organization of an air transport line known as the Florida Airways Corporation, which will carry passengers and freight across the southern part of Florida between Tampa, Fort Myers and Miami, was announced Dec. 21 by Reed M. Chambers, former commander of the Ninety-fourth Air Squadron in France. Mr. Chambers is head of the new company, and has surrounded himself with a group of former army fliers.

The first route will be opened on Jan. 1, and will probably be extended to other cities of Florida as well as to Atlanta and Cuba, he said. The company will use four airplanes built by the Stout Metal Airplane Company, owned by Henry Ford, which will be delivered this week and flown from Detroit to Florida.

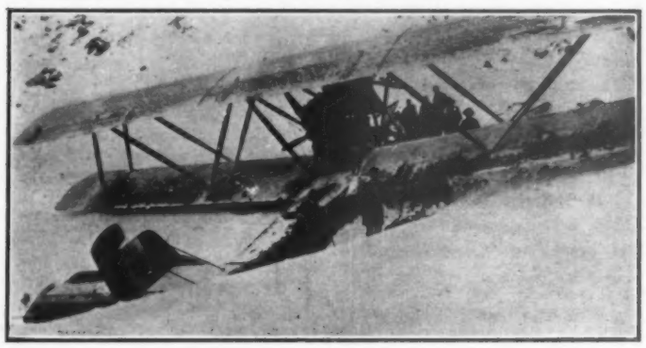
"The corporation has been in process of organization for six months," said Mr. Chambers, "but announcement was withheld until the organization, the landing fields in Florida and all equipment were ready. Florida was chosen as the State in which to begin operations because of the favorable climatic conditions, and the unusual congestion there of mail and freight. An embargo has been placed by the railroads on practically all classes of freight. Two steamship lines between Boston, New York and Florida, are booked for weeks in advance. Practically every city in Florida has asked us to extend our service to them. Air transport has become a necessity to them."

The company will make four round trips a day between the cities on the first route, carrying passengers, express and freight on each trip.

"Before we started out," said Mr. Chambers, "we got the costs of air transport by the only two lines in America—the air mail and Henry Ford's private air line from Detroit to Chicago and Cleveland. On the basis of their operating costs we have figured that it will cost us for the first year of operation 80.4 cents a mile. This will include a reserve for depreciation and obsolescense of equipment of 100 per cent for the year. This figure has been used in estimating the costs of the Tampa, Fort Meyers and Miami line. The costs per mile will be decreased materially when more lines are operated.

"The tariff we will charge will be based on the service rendered by the saving of time only and will disregard existing passenger fares and express rates. This will approximate $5 for every hour saved by air transit over that required by present carriers for each 180 lb., or the average weight of each passenger."

The ground organization will be operated by Major W. A. Robertson, U.S.A., retired, who was in the Air Service during the war, and later in charge of the border air patrol from San Diego, and Lieut. John Harding, Jr., who was on the



Italian Flying Boat lands in the Swiss Alps during a storm

Army flight around the world. Edward S. Hart, secretary and treasurer of the company, was with the Shipping Board of the Treasury Department as traveling auditor, and H. J. Wymer, in charge of public relations, is a former Army flier. The rest of the organization includes six pilots, four mechanics and four airplane riggers.

Sikorsky Passenger Carrying

The large, two Liberty Sikorsky, the S29A, which has been flying from Roosevelt Field, Westbury, L.I., completed its 300th flight on Dec. 13. This plane, it is stated, has now carried 2,915 passengers and flown 150 hours. Besides passenger carrying the plane has made many interesting advertising flights carrying freight of various kinds.

Blown to Massachusetts

Fred Becker, test pilot for the Wright Aeronautical started out blithely from Mitchel Field to run a little altitude test. This was at 2:30 on the afternoon of Dec. 18. The afternoon passed and evening came, the lights were turned on to the field but Becker had not come down from the skies. The bureau of missing persons was notified, WJZ sent out a message to the effect that Becker was lost in the clouds and that if anyone found him they were to lead him back to his home in Port Washington. Various facetious pilots who knew what an experienced flier Becker is, suggested that he might have dropped his 'Sky Hook' and was resting comfortably among the clouds but as darkness settled down considerable concern was expressed. Finally a wire was received from Kingston, Mass., saying that the flier had landed safely. It appears that Becker had gone up without a face mask or a compass. According to accounts he reached an altitude of around 26,000 ft. The cold was extreme and Becker without a mask and with no compass evidently did not keep the plane continuously headed into the stiff N.W. wind which

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FOR SALE: New Standards with OXX6 motors ready for immediate delivery. New wings, new cloth, finished pigment silver, Duco finished fuselage. Real bargains at $1100.00 each. Lincoln Standard Aircraft Corp., Lincoln, Nebr.

FOR SALE: Laird Swallow, excellent, high compression, OX5, brand new cover, priced right. Box 403, AVIATION.

We are building 50 sets of new Standard wings, covered cotton cloth six coats silver pigmented dope, $390.00 per set. New steel tubing tail units for Standards priced right. Lincoln Standard Aircraft Corp., Lincoln, Nebr.

Draftsmen with aeronautical experience wanted. Apply, stating full particulars as to age, salary required, etc. to Huff, Daland Aeroplanes, Inc., Bristol, Pa.

Fokker D7 two place, 56 gal. gas, new cloth, finished pigment gold, A, E, or I type Hisso. Price on application. Lincoln Standard Aircraft Corp., Lincoln, Nebr.

FOR SALE: At bargain, one good J-N spare OXX6 new motor, walnut prop, and other parts. Want Standard J-1. James Christman, Roy, N. Mex.

Martin R five place, 200 hp. Liberty 6; ready for delivery. Price on application. Lincoln Standard Aircraft Corp., Lincoln, Nebr.

FOR SALE: Laird Swallow genuine linen, tight as a drum, natural finish, kept in hangar, perfect condition, new, Hamilton prop. Don't answer unless you have thirteen hundred in cash. B. T. Barber, Iola, Kansas.

We have in stock at all times a complete line of Standard, Jennie and Canuck wings, new and used. Heath Airplane Co., 2856 Broadway, Chicago, Ill.

FOR SALE: OX5 copper-tipped Flottorp, tooth-pick propellers, brand new, bargain $15.00 each. Francis Gloden, Deerfield, Ill.

New OX5 motors complete with tools in original crates $350. F.O.B. Indianapolis, Class A OX5 motors $175.00 F.O.B. Indianapolis. Motors ready for immediate shipment. Indianapolis Aviation Company, Indianapolis, Ind.

FOR SALE: One new radiator for Hisso 150 H.P. motor $45.00, one crank shaft for Hisso 150 H.P. $15.00, one Jenny in A-1 condition $675.00, a real good ship ready to go, 3 OX5 motors complete Government overhauled, like new, $200.00 each, 2 upper Jenny wings, covered, $45.00 each, 2 new elevators, covered, $15.00 each, 2 ailerons, covered, $7.50 each and one rudder $15.00, all have wires and horns on. G. D. Ludue, 1569 California St., San Francisco, Cal.

WANTED: Accurate mechanical details for converting Le Rhone to radial. Universal, 177 Stillman St., San Francisco, Cal.

FOR SALE: 3 place 180 H.P. Hispano Standard in perfect shape, fuselage retrued and recovered. Motor just overhauled. DH wheels and landing gear. Will demonstrate any time. Priced right for cash. Eddie Brooks, Exchange Bldg., Denver, Colorado.

was blowing at the time. As a result, when he started down he found himself over Long Island Sound and headed for the nearest land. He landed about dusk, 175 miles from his starting point with his face frozen and eyes almost closed by the cold.

Plane Wreckage Found in Woods

A hunter lost in thick woods near Pittsfield, Mass., reports that he came on the moss covered wreckage of an airplane. The fact is of interest as, in June 1919, Capt. Mansil R. James, a Canadian flier, took off from Tyringham, Mass., and was never heard of again. Large rewards were offered at the time and the woods were thoroughly searched, but no trace of the lost flier was found and it was believed that he had probably fallen into some lake or river. The hunter who reported the finding of the wreckage was unable to lead a search party back to the plane as the woods at this point are exceedingly thick and he had not been able to establish any landmarks to guide him back to the point. The search is being continued.

Thanked By Air Service

Appreciation of the efforts of the St. Joseph (Mo.) Chapter of the National Aeronautical Association in getting towns along airways in the central part of the country to paint identifying names on roofs as signposts for air pilots was expressed in a statement issued by the Army Air Service.

"After much hard work," says the Air Service, "arrangements have been perfected by which many of the airways will be thus plainly marked so they can be followed with comparative ease, and so that flying—air transportation, air travel—will be made much safer. The Air Service is particularly gratified to know of the interest taken by the St. Joseph Chapter and the people of that city in thus promoting aviation, and is glad to give credit, as well as its thanks, to those who have done so much to assist in bringing about the coming era when air travel will play a great part in the economic life of this nation."

The statement explained that many air accidents have been due to the inability of pilots to identify readily, localities over which they were passing, in foggy weather or when visibility was low for other reasons. Forced landings in unknown country, to correct map bearings, have led to many crashes.

United States Air Forces

U. S. ARMY AIR SERVICE

Pilot Hurled From Airplane Descends Safely in Parachute

It often occurs that it is difficult to classify properly an occurrence such as happened at Langley Field, Va., on October 1st last, as an accident or merely an incident. Flying through the clouds in a "Tommy" (Thomas Morse plane) at an altitude of several thousand feet, Lieutenant Rogers, Marine Corps, was about to look at his watch, when he noticed that his safety belt was unfastened. In trying to fasten it, he lost control of the stick and the "Tommy" made an abrupt nose dive. Lieutenant Rogers, following all the natural laws of Physics, continued his forward horizontal flight alone.

Retaining his presence of mind, however, as well as a parachute, the lieutenant drifted back to earth safely. The pilotless "Tommy", in its unholy "Back to the land movement", described a straight and swift line to terra firma and upon impact with mother earth, instantly metamorphosed into a mass of junk.

Air Service Enlisted Men Receive Commissions

The following enlisted men of the Air Service recently received commissions as 2nd Lieuts. with rank from June 15, 1925:

Master Sergeants Walter L Wheeler and Benjamin T. Starkney; Staff Sergeants Norme D. Frost, Milton M. Murphy, Lee Q. Wasser; Technical Sergeants Linus D. Frederick and George C. McGinley; Flying Cadets Otto Wienecke and Willard L. Harris. Lieuts. Frederick, Murphy and Frost were assigned to Brooks Field, San Antonio, Tex.; Lieuts. Wasser, McGinley and Wienecke to Kelly Field, Tex.; Lieut. Wheeler to the Hawaiian Department; Lieut. Harris to Langley Field, Va.; and Lieut. Starkey to Phillips Field, Md.

Three civilians also received commissions as 2nd Lieuts. in the Air Service and were assigned to the Primary Flying School at Brooks Field, Tex., viz: Aaron Jackson Yauger, Charles H. Valentine and Joseph K. Gibson.

Shipments By Air From Middletown Air Intermediate Depot

A total of 2808 lb. of miscellaneous spare parts and supplies were shipped by air from the Middletown Air Intermediate Depot during the months of July, August and September. Of this total, 2600 lb. were shipped in Martin Bombers in five trips, the loads comprising 425, 395, 280, 680 and 820 lb., respectively, thus demonstrating the utility of the Martin Bomber in the matter of transporting supplies. Of the remaining 208 lb. of supplies, 200 were carried in DH4B's.

Army Air Orders

Sec. Lt. Darr Hayes Alkire, A.S. Res., Langley Field, to Salt Lake City, reverting to inactive status Dec. 31.

Sec. Lt. Henry G. Fisher, A.S. (Inf.) and Sec. Lt. John P. Kirkendall, A.S., Kelly Field, to Scott Field.

Capt. William C. Ocker, A.S., San Diego, to Crissy Field.

First Lt. Edwin R. McReynolds, A.S., Bolling Field, to Langley Field.

Following officers, A.S., assigned to duty at station indicated, upon completion of tour of foreign service: First Lieuts. Walter H. Reid, Fairfield; Evers Abbey, Langley Field; William W. Welsh, Langley Field; Edgar T. Selzer, Brooks Field; Maj. Arnold N. Krogstad, Langley Field; Capt. Donald P. Muse, Bolling Field; Capt. Chilion F. Wheeler, Bolling Field; First Lt. Frank B. Tyndall, Curtiss Plant, New York.

Following officers from stations indicated to New York City, to sail Apr. 22, via Government Trans. for Hawaiian Dept.: Sec. Lts. John K. Nissley, A.S., Langley Field, Oscar P. Hebert, A.S., Aberdeen Proving Ground.

First Lts. Orin J. Bushey, A.S., Scott Field, Richard K. Lebrou, A.S., Middletown and Sec Lt. Robert B. Williams, A.S., Mitchel Field, to New York City, to sail May 13, for Canal Zone.

First Lt. John A. Macready, A.S., McCook Field, to New York City, to sail on Government trans. March 18 for Canal Zone.

Following officers relieved from duty at stations indicated, to New York City to sail on Government trans. March 12 for Philippine Islands: Capt. William F. Volandt, McCook Field, First Lieuts. Paul E. Burrows, Middletown, Austin W. Martenstein, Mitchel Field, Carlton F. Bond, Aberdeen Proving Ground, Charles E. Thomas, Jr., Fairfield, John A. Kase, Langley Field.

First Lieuts., A.S., John G. Williams, Rockwell Field, Clements McMullen, San Antonio, Matthew E. Finn, Kelly Field, to San Francisco, to sail on transport Apr. 3 for Philippine Islands.

First Lt. James A. Mollison, A.S., Penn. Nat. Guard, Phila., to New York City, to sail March 12, via Government transport for Philippine Islands.

Maj. Byron Q. Jones, A.S., Chief of A.S., to Dir. Army Ind. College, Washington.

Sec. Lt. Hubert W. Ketchum, Jr., A.S., A.S. Prim. Fly. Sch., Brooks Field, to duty with Sec. Div., Fort Sam Houston.

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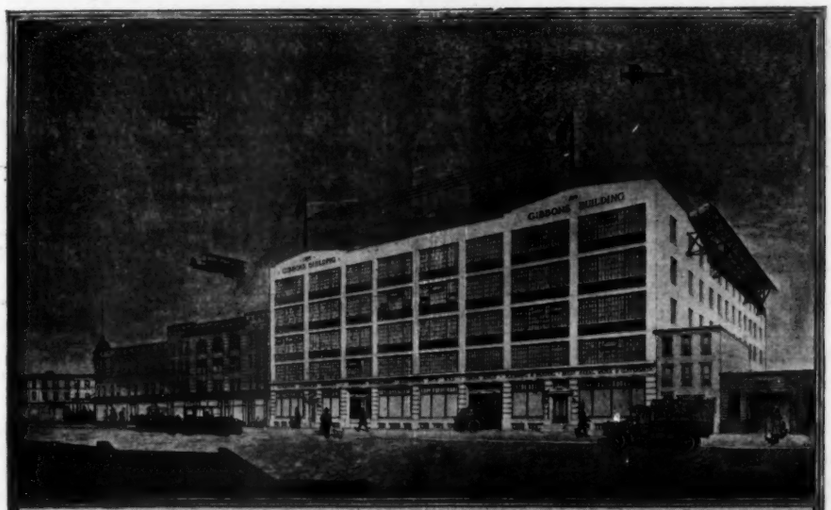

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Arthur Brisbane, in an editorial of September 13, 1925, said:

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U. S. NAVAL AVIATION

Test of Towing Targets

Rear Admiral C. C. Block, Chief of the Navy Bureau of Ordnance, has disclosed that the anti-aircraft practice conducted in July by the dirigible Shenandoah and the battleship Texas in Tangier Sound, Chesapeake Bay, was primarily to test a new type of target, while the firing at the target was only incidental.

The Shenandoah towed the target at that time and the understanding generally was that the efficiency of the anti-aircraft guns on the Texas was the object primarily to be tested. It later was said that the number of hits made was most satisfactory.

Discussing the tests in his annual report, Admiral Bloch said:

"The towed target hitherto used has been too small to give a proper point of aim at high altitudes and too small to give a target large enough to register hits.

"Utilizing the naval aircraft factory, the bureau has been developing a target of large size to be towed by heavier-than-air craft and a target of much greater size to be towed by lighter-than-air ships, singly or in tandem.

"The U.S.S. Texas and Shenandoah operated together during the week ending July 24. These operations were solely for the purpose of testing such targets, their towing gear and their handling. They were in no sense gunnery exercises, nor were they intended to be such."

700 Flying Hours During 1925

On Dec. 17, Lt. Reginald D. Thomas, commanding officer of the Naval Reserve Air Station at Squantum, Mass., completed his 700th hour of flying since Jan., 1925. All the flying was done as part of Naval flying duty and most of it was in the instruction of students or reserve officers. This excellent record was established without injury to planes or personnel.

Navy Air Orders

Mach. Walter W. Eshelman det. Nav. A. Sta., San Diego, Calif., to USS Procyon.

Lt. Comdr. Dean H. Vance (MC) det. Torp. & Bomb Plane Sqdn. One, Aircf. Sqdns., Sctg. Flt., to temp duty Army Sch., Av. Mitchell Field

Mach. William R Sellig det V.S., Sqdn. One, Aircf. Sqdns., Sctg. Flt., to USS Trenton.

Lt. William D. Thomas det. U.S.S. Richmond to Aircf. Sqdns., Sctg. Flt.

Ens. Church A. Chappell det. U.S.S. Mississippi to temp. duty Nav. A. Sta., Pensacola.

Ens. John G. Crommelin det. U.S.S. Chaumont, to temp. duty Nav. A. Sta., Pensacola.

Ens. Richard G. McCool det. Rec. Ship, San Francisco, to temp. duty Nav. A. Sta., Pensacola.

Lt. (jg) John E. Picton det. Rec. Ship, San Francisco, to temp. duty Nav. A. Sta., Pensacola.

Lt. (jg) Paul E. Roswall det. U.S.S. Mississippi to temp. duty Nav. A. Sta., Pensacola.

Ens. Frank C. Layne det. U.S.S. Colorado to temp. duty Nav. Air. Sta., Pensacola.

Ens. Arthur B. Leverett det. U.S.S. Mississippi to temp. duty, Nav. A. Sta., Pensacola.

Mch. James J. McCormick det. Nav. A. Sta., San Diego, to U.S.S. Mississippi.

Ch. Carp. Giles E. Quillin det. Nav. A. Sta., N.O.B., Hampton Roads, Va., to U.S.S. Mississippi.

Following officers from stations shown to temp. duty Nav. A. Sta., Pensacola: Lt. (jg) William Butler det. U.S.S. Tennessee; Lt. (jg) Wilson P. Cogswell det U.S.S. Henderson; Lt. (jg) John M. Higgins det. U.S.S. Marblehead; Lt. (jg) Rogers S. Ransehousen det. U.S.S. Milwaukee; Lt. (jg) Frank C. Sutton det. U.S.S. La Vallette; Ens. William L. Hoffheins det. U.S.S. Colorado; Lt. (jg) Harold L. Meadow det. U.S.S. New Mexico; Ens. Wallace M. Beakley det. U.S.S. Mahan; Ens. Willis E. Cleaves det. U.S.S. Maury; Ens. Neil K. Dietrich det. U.S.S. Colorado; Ens. Clarence E. Ekstrom det. U.S.S. California; Ens. Warren W. Harvey det. U.S.S. California; Ens. Truman J. Hodding det. U.S.S. Maryland; Ens. Howard V. Hopkins det. U.S.S. West Virginia; Ens. Grichton N. Hubbard det. U.S.S. Mississippi; Ens. Donald

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PUBLISHER'S NEWS LETTER

Two bits of news from England have created great interest among those who are following the American aeronautical affairs. One stated "The first year of Imperial Airways, Ltd., the new trust of all the British flying companies, resulted in a loss of more than $600,000.00. The net loss was $60,000.00, the remainder being covered by Government subsidy. The annual subsidy, hereafter, will be $450,000.00 and the company will open a service between Egypt and India, with a connection between England and Egypt." This deplorable financial condition of the British airline should be kept in mind by everyone and related to those enthusiastic Americans who, when they return from abroad, point with loud praise to the crosschannel passenger service and speak disparagingly of American lack of enterprise. If every aeronautical writer and speaker will emphasize the fact that we lead the world in aerial service and intend to make air transport profitable rather than a spoon-fed enterprise, they will assist in correcting a very serious misapprehension that has grown to great proportions in this country.

* * * *

Another interesting point is made in that indispensible paper, "The Aeroplane," which reports a meeting held at the Royal Aero Club. The subject discussed was "American Aviation." Mr. C. G. Grey gave a summary of the speech of Mr. C. R. Fairey, the British aircraft constructor, who has caused considerable discussion in England by securing the rights from the Curtiss Company to manufacture Curtiss engines and Reed propellers for the Air Ministry. The particular part that interested us most was that on the effect of regulation of aircraft in England. It was as follows:

> "As to private flying, as distinct from subsidized air line flying, we are far behind the States. He himself saw over a hundred privately owned machines at the Pulitzer Trophy contest and the owners of these machines regarded them as normal means of transport. As an American said to him on the subject, they had 'no control over aviation but a hell of a lot of flying.'
>
> "In England one has to get certificates for everything. That was what made English aeroplanes fit for heroes to fly in. But if an English aviator wanted to take his best girl to Brighton by air he had to get an A certificate for himself and put in his time blowing mercury out of a tube (to prove his lung power). And then when he had got his airworthiness certificate for himself and his machine, he had to wait for a ground-engineer who, having certified the machine as airworthy before it left Croydon, had to go to Brighton and certify that it was fit to fly back again.
>
> "The American idea was that flying was better than control."

* * * *

The slogan "Flying, better than control" may be adopted with advantage in some quarters in this country. If it were not for the fact that the Bingham Bill was intended to promote flying rather than to regulate it, we would not be for it. We heartily approve of not having a special Bureau in the Department of Commerce. There are too many bureaus already. We are given to understand that the bill will be enforceable only when its provisions apply to interstate flying. Senator Bingham in a letter to AVIATION put the matter excellently, when he wrote:

> "We hope that, after the Department of Commerce has licensed and examined those pilots and airplanes which are to engage in inter-state commerce, the pilots so licensed will advertise their federal license and that the public will gradually come to avoid those pilots and planes which have not a Federal certificate or an equally good State certificate."

This is not only sound, but avoids the question of the constitutionality of regulating intra-state flying. No one disapproves of regulation. It is the *kind* of regulation that may be put into effect, that is feared. Federal inter-state flying inspection and approval, is the starting point, and this is all that Senator Bingham's bill attempts to do. State regulation of intra-state flying and an opportunity for federal inspection will do two things. It will make the Department of Commerce careful not to have the rules too drastic and, on the other hand, will make the ownership of a Federal license a valuable commercial asset.

* * * *

The objectionable parts of all previous recommendations have been the compulsory nature of the bills. All aircraft and all pilots were to be policed, with heavy penalties for any infraction of a long list of offenses. The Bingham Bill sugar-coats the whole process in such a way that all objections should be withdrawn. There is a large "But" and "If" that is attached to our endorsement of this law. As it stands, it means what it says, but amendments are so easy to make it mean something entirely different that, until it passes the House and then goes through the conference committee, it should be watched with the keenest interest.—L.D.G.

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